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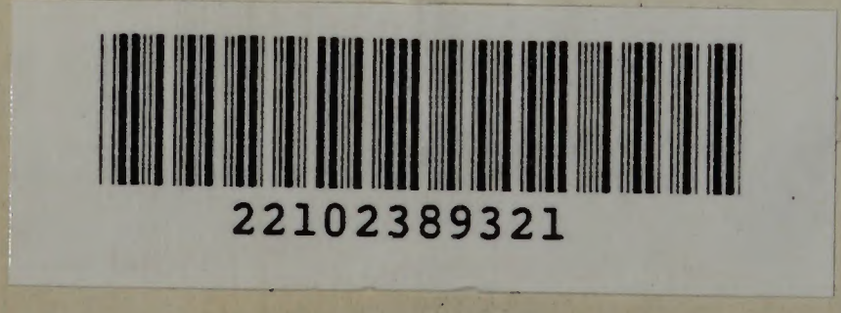

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... Irish Church Bill. ...
of these meetings takes place this evening ...
the second at Wakefield to-morrow. On Saturday a great county demonstration will take place at the Victoria-hall, Leeds. Arrangements for similar gatherings in other towns are being made. These efforts to impose some check on the presumption that public opinion is all in favour of the Government measure are very commendable, and will, we trust, be emulated in other parts of the country. Up to the present time the opponents of disestablishment have not expressed themselves with half the fervour and determination demanded by the importance of the occasion; and it can hardly be doubted that their power and authority have in consequence been greatly underestimated.—*Globe of last night.*

Vice-Chancellor James had before him yesterday morning the case of Brownjohn *v.* Gale, in which a question was raised as to the disposal of a legacy of £500, given by the late William Hollins to the Irish Society of London, for giving scriptural education to the native Irish through the medium of their own language. In 1853 (after the date of Mr. Hollins's will) that society became amalgamated with the Society for Irish Missions to Roman Catholics, and the latter society claimed the legacy. Counsel for the Irish Society of Dublin insisted that there was no existing society which fully answered the description in the will, and that if the Irish Society of Dublin was not entitled to the legacy it ought to be administered under a scheme to be settled by the court. Counsel for the next of kin contended that the legacy had lapsed. Mr. Amphlett, Mr. E. K. Karslake, Mr. F. E. Kay, Mr. Fischer, Mr. Eddis, Mr. Lindley, and Mr. Simmonds appeared in the case. The Vice-Chancellor ... legacy lapsed in consequence of the ...

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Constant Reader.—He can legally claim the property, the [illegible] of his having been baptised or not making no difference.

T. E. Simpson.—1. The expense varies with the number of witnesses that have to be called and the evidence required. 2. In the Divorce Court.

FREEMASONS AS ARBITRATORS.

To the Editor of the Manchester Courier.

Sir,—Seeing the number of strikes going on around us, I should like to see more publicity given to the suggestion, first made by Mr. Roger Smith, editor of the *Architect*, and afterwards by the *Shadow*, of calling in a lodge, or a deputation from a lodge, to arbitrate between the contending parties. The Freemasons as a body are universally known and respected, and I think would act impartially between capital and labour.—Yours, &c.,

R. M. BANCROFT.

A RAPID MAGISTRATE.

To the Editor of the Manchester Courier.

Sir,—A paragraph under the above head appears in your impression of to-day, which states, on the authority of the *Sheffield Independent*, that on the previous Monday, Mr. ex-Mayor Webster had disposed of 22 prisoners in 40 minutes. I happened to be engaged at our City-court on a certain Monday, when the stipendiary and other magistrates were engaged in the investigation of the murder of Mr. Mellor and Taylor's children. With the exception of this case, the whole of the business was done in the second court, where Mr. Joule disposed of upwards of 100 prisoners in [illegible] minutes. There were a few double cases which

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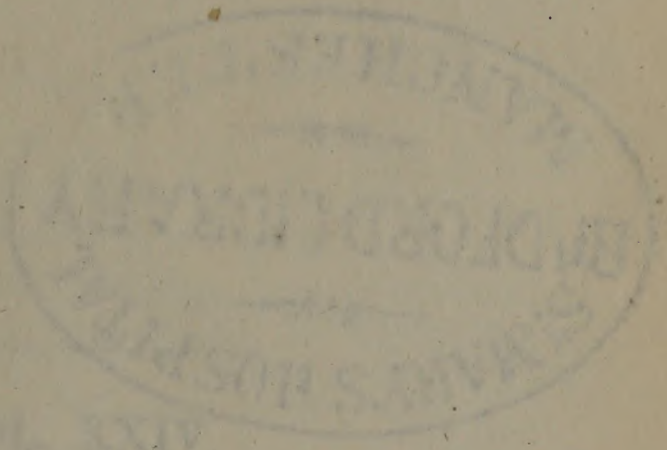

VOL. XXXIV.

AUGUST AND NOVEMBER, 1862.

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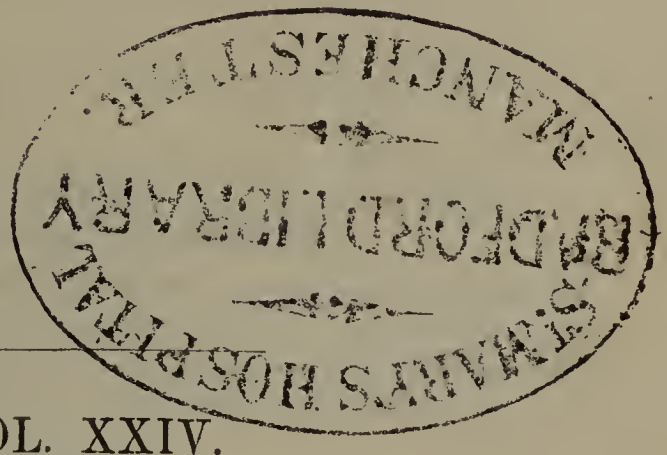

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AUGUST AND NOVEMBER, 1857.

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Contents.

No. XLVII.—AUGUST 1, 1857.

PART I.—ORIGINAL COMMUNICATIONS.

Page

ART. I.—Puerperal Fever. By EDWARD WILLIAM MURPHY, A.M., M.D., Professor of Midwifery, University College, London, . 1

ART. II.—Observations on Subacute Inflammation of the Prostate Gland, its Diagnosis and Treatment. By T. HAWKESWORTH LEDWICH, M.R.I.A., F.R.C.S.I., Lecturer on Anatomy and Surgery in the Original School of Medicine, Dublin, ... 30

ART. III.—Observations on the Human Crania contained in the Museum of the Army Medical Department, Fort Pitt, Chatham. By GEORGE WILLIAMSON, M.D., Staff Surgeon, Second Class. (*continued from* vol. xxiii. p. 373), ... 42

ART. IV.—Essays on the Natural History of Syphilis. No. III. By WILLIAM HENRY PORTER, M.D., Professor of Surgery in the Royal College of Surgeons in Ireland; Surgeon to the Meath Hospital and County of Dublin Infirmary; and Consulting Surgeon to the City of Dublin Hospital; &c., &c., ... 75

ART. V.—Ophthalmic Hyperæsthesia considered in Relation to Strumous Ophthalmia; with practical Remarks on the latter Affection. By HENLEY THORP, M.D., F.R.C.S.I., Letterkenny, 95

ART. VI.—Relation of a Case of Formation of a New Nose; with some Remarks. By JOHN HAMILTON, Surgeon to the Richmond Hospital, ... 115

Page.

ART. VII.—Observations on the Practice of "Écrasement Linéaire" in the Parisian Hospitals by M. Chassaignac; and an Incidental Notice of the Views of that Surgeon on the Employment of Chloroform. By K. I. O'DOHERTY, F. R. C. S. I., ... 120

ART. VIII.—An Inquiry into the Nature and Pathology of Tetanus; with a view to decide the question as to the propriety of Amputation or other Surgical Operations in Traumatic Cases. And Remarks on the Peculiar Action of Chloroform, Nicotine, and the Wourali Poison. By S. HENRY HOBART, A. B., M. B. T. C. D., &c., Medical Officer, Cork Dispensary, ... 133

PART II.—REVIEWS AND BIBLIOGRAPHICAL NOTICES.

1. Des Anéurysmes et de leur Traitement. Par Paul Broca, . . 148

2. The Hygienic Treatment of Pulmonary Consumption. By Benj. Ward Richardson, M. D., ... 161

3. On Stricture of the Urethra. By Henry Smith, F. R. C. S., Surgeon to the Westminster General Dispensary, ... 163

4. Recent Swedish Medical Works, ... 175

i. Studier i Bråckläran. Af Dr. Carl Benedict Mesterton, Chir. Docens vid Universitet i Upsala.

Om Radicaloperation för Ljumskbråck (Med en planche).

Studies of Hernia. By Dr. Carl Benedict Mesterton, Lecturer on Surgery in the University of Upsala.

On Radical Operation for Inguinal Hernia (with a Plate).

ii. Bidrag till läran om Emboli. Akademisk Afhandling. Af Albert Lindström.

A Contribution to the Theory of Emboli. An Academic Thesis. By Albert Lindström.

iii. Föreläsningar i Medicinens Historia, hållne af J. W. Broberg, Bibliothekarie vid Kongl. Carolinska Medico-chirurgiska Institutet. Första Serien.

Lectures on the History of Medicine. Delivered by J. W. Broberg, Librarian to the Royal Carolinean Medico-chirurgical Institute. First Series.

iv. Berättelse om Sjukvården vid Kronprinsessan Lovisas Vårdanstalt för Sjuka Barn år 1855. Afgiven af Professor Gust. von. Düben, Andre Läkare vid Vårdanstalten.

Report on the Care of the Sick in the Crown Princess Louisa's Institution for Sick Children for the year 1855. By Professor Gustaf von Düben, Second Physician to the Institution.

Swedish Medical Works—*continued.* Page.

v. Handbok för Artilleri-Befälet.

Manual för Artillery Officers.

vi. Om några väsentliga Fel i Barnauppfostran, och om det uppväxande slägtets fysiska försämring, samt behofvet af gymnastik, såsom ett upprättelsemedel. Föredrag vid Pedagogiska Föreningens årshögtid den 21 Maj 1856. Af Dr. Herman Sätherberg.

On some Essential Defects in the Education of Children, and on the Physical Deterioration of the Rising Generation, and the Necessity of Gymnastics as a Restorative Agent. An Address delivered at the Annual Festival of the Educational Association on the 21st of May, 1856. By Dr. Herman Sätherberg.

5. Diseases of the Eye and Ear, ... 182

i. A Catechism of the Medicine and Surgery of the Eye and Ear, for the Clinical Use of Hospital Students. By T. Wharton Jones, F. R. S., &c., &c.

ii. The Ophthalmia of Ireland: its Nature, Effects, and Treatment. By John Williams, A. B. T. C. D., &c., &c., Surgeon to the Cork Eye Dispensary.

6. On the Urinary Secretion of Fishes; with some Remarks on this Secretion in other Classes of Animals. By John Davy, M.D., F. R. SS. L. and E., &c. Reprinted from the Transactions of the Royal Society of Edinburgh, ... 185

7. Phantasmata; or, Illusions and Fanaticisms of Protean Forms productive of great Evils. By R. R. Madden, F. R. C. S. Eng., M. R. I. A., &c., ... 188

8. Rapport à la Société de Chirurgie sur l'Eléphantiasis du Scrotum. Par M. Hte. Bon. Larrey, ... 194

9. Du Microscope au point de Vue de ses applications à la Connaissance et au Traitement des Maladies Chirurgicales. Par le Dr. L. Saurel, ... 197

10. A Treatise on Cancer and its Treatment. By J. Weldon Fell, M. D., &c., ... 199

11. God in Disease; or, the Manifestations of Design in Morbid Phenomena. By James Foulis Duncan, M. D., Fellow of the Royal College of Physicians in Ireland, Physician to Sir P. Dun's and Simpson's Hospitals, ... 203

12. Animal Physics; or, the Body and its Functions familiarly explained. By Dionysius Lardner, D. C. L. With 520 Illustrations, ... 204

13. The Transactions of the American Medical Association, instituted 1847, Vol. IX., ... 207

Page.

14. Öfversigt af Otiatrikens historia och närvarande tillstånd; Tal hållet vid Svenska Läkare-sälskapets allmänna årssammankomst d. 7 okt. 1856 af afgående ordföranden Dr. J. G. Keyser, ... 208

A Sketch of the History and present State of Otology: an Address delivered at the Annual General Meeting of the Society of Physicians, on the 7th October, 1856, by the outgoing President, Dr. J. F. Keyser.

PART III.—MEDICAL MISCELLANY.

Transactions of the Association of the Fellows and Licentiates of the King and Queen's College of Physicians in Ireland:—

Dr. H. Kennedy on Intestinal Hemorrhage in Typhus and Typhoid Fever, ... 209

Dr. M'Clintock's Case of Suicidal Poisoning by Strychnia, 214

Dr. Moore on Scarlatina Faucium, ... 218

Dr. H. Kennedy's Case of Disease of the Heart, . . . 222

Dr. Churchill on the Employment of Carbonic Acid Gas in certain Diseases, ... 227

Dr. Atthill's Case of Abnormal Enlargement of the Labia and Nymphæ removed by the écraseur, ... 233

Transactions of the County and City of Cork Medical and Surgical Society:—

Dr. Finn's Case of Hypertrophy of the Heart, ... 235

Dr. S. H. Hobart's Cases of Tetanus, ... 236

Dr. Harvey's Case of Compound Presentation of the Face and Arm, ... 240

Dr. Harvey's Case of Recovery from Ruptured Uterus, . 241

Selections from Foreign Periodicals:—

On Acute Atrophy of the Lungs. By Professor Buhl, of Munich, ... 246

On a Peculiar Cavernous Degeneration of the Muscular Substance of the Heart. By Dr. C. Skrzeczka, . . 249

Case of Acute Phosphorus-Poisoning, observed in the Second Division of the Imperial and Royal Garrison Hospital. By Dr. Th. Nitsche, ... 252

Notices in List of Books Received.

Budd on Diseases of the Liver. Urling's Vocal Gymnastics. Saurel on Gun-shot Wounds. Soultzbad Mineral Waters. George on Local Anæsthesia in Dentistry. Lloyd on the Wave Theory of Light. South on Hospital Nurses. Fenwick's Popular Treatise on Diseases. Barclay's Sanitary Report. The Midland Medical Journal. Johnson on the South of France and the Pyrenees. Thomson on the Structure and Functions of the Eye. Duncan on the Duration of Labour. Dobell's Hæmantlion.

BOOKS RECEIVED.

1. On Diseases of the Liver. By George Budd, M. D., &c. Third Edition. London: Churchill, 1857. 8vo. pp. 496.

[*This work, now the standard book of reference on the diseases of which it treats, has been carefully revised, and many new illustrutions of the views of the learned author added in the present edition.*

2. Vocal Gymnastics; or, a Guide for Stammerers, and for Public Speakers, and others who suffer from certain Minor Peculiarities of Utterance. With an Appendix of Cases which have been treated upon the Method herein described. By G. F. Urling. London: Churchill, 1857. 16mo. pp. 89.

[*This little book affords some very useful hints to aid in remedying this distressing affection, and is altogether free from the secret quackery which other publications on the subject usually contain.*]

3. Mémoire sur les Fractures des Membres par Armes a Feu; suivi d'Observations, pour servir à l'Histoire des Blessures par Armes de Guerre. Par le Dr. L. Saurel. Montpellier: Pitrat, 1856. 8vo. pp. 148.

[*A very able essay, illustrative of the importance of conservative surgery in the treatment of gun-shot wounds, as shown by the result of cases so managed in the great military hospital at Montpellier.*]

4. Du Microscope au point de Vue de ses applications à la Connaissance et au Traitement des Maladies Chirurgicales. Par le Dr. L. Saurel. Paris: Baillière, 1857. 8vo. pp. 148.

5. Soultzbad. Le Bain de Soulzt, près Molsheim (Bas-Rhin). Source Minérale Chloro-Iodo-Bromée. Monographie, par le Dr. E. Eissen. Paris: Masson, 1857. 8vo. pp. 92.

[*An excellent hand-book, descriptive of a very important mineral water, the source of which is beautifully situated in the neighbourhood of Strasbourgh, and consequently easy of access to the English invalid.*]

6. On Stricture of the Urethra. By Henry Smith, F. R. C. S., &c. London: Churchill, 1857. 8vo. pp. 280.

7. Etude sur l'Anesthésie Locale dans ses applications a l'Art Dentaire, &c., par M. J-B. George. Paris: Labé, 1857. Pamphlet, pp. 31.

[*Descriptive of a simple and apparently effectual apparatus for producing local anæsthesia in dental surgery, invented by the author.*]

8. Elementary Treatise on the Wave Theory of Light. By Humphrey Lloyd, D. D., &c., &c. Second Edition. London: Longmans, 1857. 8vo. pp. 208.

[*Dr. Lloyd's Treatise is so well known to the scientific world as scarcely to need our commendation; yet we cannot avoid saying that its value is much augmented by the present edition containing an account of the more important recent discoveries in Physical Optics.*]

9. Facts relating to Hospital Nurses. Also, Observations on Training Establishments for Hospital and Private Nurses. By John F. South, Senior Surgeon of St. Thomas' Hospital. London: Richardson, 1857. Pamphlet, pp. 33.

[*A plea by the learned author on behalf of the present system of hospital nursing in the splendid institution of which he is the Senior Surgeon.*]

10. A Popular Treatise on the Causes and Prevention of Diseases. By S. Fenwick, M. D., &c. Vol. I. Diseases of the Throat and Lungs. London: Churchill, 1857. 12mo. pp. 220.

[*We do not like this attempt at popularizing medicine; it savours too much of the plan adopted by quacks for advertising their systems.*]

11. General Report upon the Sanitary Condition of the Parish of St. Luke, Chelsea, during the year 1856. By A. W. Barclay, M. D., F.R.C.P., &c. Chelsea: Macmichael, 1857. Pamphlet, pp. 18.

[*A very able Report on sanitary matters: the result of the new arrangements now in full operation in the great metropolis, consequent on the Act of Parliament under which Medical Officers of Health are appointed in the different parishes.*]

12. The Midland Quarterly Journal of the Medical Sciences, May, 1857. Birmingham: Cornish, Brothers. pp. 192.

[*Our new contemporary promises well for future success, and is most creditable to its able conductors.*]

13. Scottish Lunacy Commission. Report by Her Majesty's Commissioners appointed to inquire into the state of Lunatic Asylums in Scotland, and the Existing Laws in reference to Lunatics and Lunatic Asylums in that Part of the United Kingdom. With an Appendix. Edinburgh. 1857. Printed for Her Majesty's Stationery Office. 2 vols., 8vo. pp. 257 and 581.

[*In our next.*]

14. Notice sur Hyères et Cannes, &c. Par E. Lee, M. D., &c. Paris: G. Baillière, 1857. 12mo. pp. 83.

15. Sixth Annual Report of the Wilts County Asylum Devizes for the year 1856. Pamphlet, pp. 45.

[*In our next.*]

16. Seventeenth Annual Report of the Crichton Royal Institution for Lunatics, Dumfries, 1856. Pamphlet, pp. 44.

[*In our next.*]

17. A Catechism of the Medicine and Surgery of the Eye and Ear, for the Clinical Use of Hospital Students. By T. Wharton Jones, F. R. S., &c. London: Churchill, 1857. 12mo. pp. 131.

18. Précis Iconographiques de Bandages, Pansements, et Appareils. Par M. le Dr. Goffres. Paris: Méquignon-Marvis, 1857. Part 7.

19. Report on the Pennsylvania Hospital for the Insane for the year 1856. By J. S. Kirkbride, M. D., Philadelphia, U. S., 1857. 8vo. pp. 68.

[*In our next.*]

20. God in Disease; or, the Manifestations of Design in Morbid Phenomena. By James Foulis Duncan, M. D., Fellow of the Royal College of Physicians in Ireland, Physician to Sir P. Dun's and Simpson's Hospitals. Second Edition. London: Nisbet and Co., 1857. Post 8vo. pp. 323.

21. A Winter's Sketches in the South of France and the Pyrenees; with Remarks upon the Use of the Climate and Mineral Waters in the Cure of Disease. By F. H. Johnson, M. R. C. S. E., &c. London: Chapman and Hall, 1857. 8vo. pp. 336.

[*Written in an inflated, bombastic style, which disfigures much a good deal of useful information contained in the volume for medical men desirous to advise change to a milder climate for their patients.*]

22. Animal Physics; or, the Body and its Functions familiarly explained. By Dionysius Lardner, D. C. L., &c. With 520 Illustrations. London: Walton and Maberly, 1857. Small 8vo. pp. 705.

23. A Treatise on Cancer and its Treatment. By J. Weldon Fell, M. D., &c. London: Churchill, 1857. 8vo. pp. 95.

24. Tenth Annual Report of the Commissioners for Administering the Laws for the Relief of the Poor in Ireland. With Appendices. Dublin: Thom, 1857. 8vo. pp. 134.

25. The Structure and Functions of the Eye, illustrative of the Power, Wisdom, and Goodness of God. By Spencer Thomson, M. D., L. R. C. S. Edin. London: Groombridge and Son, 1857. Post 8vo. pp. 272.

[*Beautifully written, and the proofs of design well worked out, this volume may well take its place alongside the Bridgewater Treatises.*]

26. The Cattle Plague and Diseased Meat, in their Relations with the Public Health, and with the Interests of Agriculture. Two Letters to Sir George Grey, Bart., by J. S. Gamgee, Staff Surgeon, &c. London: Richards, 1857. 8vo. pp. 41 and 26.

27. Öfversigt af Otiatrikens historia och närvarande tillstånd. Af afgående ordföranden. Dr. J. F. G. Keyser. Stockholm: Norstedt and Sons, 1857. 8vo. pp. 55.

28. Archiv für die Holländischen Beiträge zur Natur und Heilkunde. Herausgegeben von F. C. Donders, Utrecht, und W. Berlin, Amsterdam. Utrecht: Keminck and Son, 1857. Parts 1 and 2. 8vo. pp. 168.

29. On the Importance of the Pulse in relation to Chloroform. By R. Dyce, M. D., &c. (Reprint.) Pamphlet, pp. 6.

30. The Baths of Germany, France, and Switzerland. By Edwin Lee, M. D., &c. Third Edition. London: Churchill, 1857. 12mo. pp. 387.

31. The Medical Profession in Great Britain and Ireland; with an account of the Medical Organization of France, Italy, Germany, and America. By Edwin Lee, M. D., &c. In two Parts. London: Churchill, 1857. 8vo. pp. 115.

32. Thirteenth Annual Report of the Directors of James Murray's Royal Asylum for Lunatics near Perth. 1857. Pamphlet, pp. 50.

[*In our next.*]

33. The British Journal of Homœopathy. London: Groombridge and Sons. 1857. No. 61.

34. The Liverpool Medico-Chirurgical Journal. No. 2. Liverpool: Walmsley, July, 1857.

35. Annual Report of the Commissioners of Emigration of the State of New York, for the year ending December 31, 1856. New York: Bryant and Co., 1857. 8vo. pp. 93.

36. Undersøgelser angaaende Inoculation af Vaccine- og Chankermaterie, for at constatere Immunitetsforholdene og deres Conseqventser. Ved Dr. F. C. Faye, Professor i Accouchement, Fruentimmer- og Börnesygdomme ved Universitetet; Overlæge ved Födselsstiftelsen og Börnehospitalet i Christiana. (Copie af Norsk Magazin for Lægevidenskaben.) Christiania: Trykt i Carl C. Werner & Comp.s Bogtrykkeri. Juni 1857. Pamphlet, pp. 69.

37. The Doctrine of the Duration of Labour. By J. Matthews Duncan, M. D., &c. Reprint. Edinburgh, 1857. Pamphlet, pp. 18.

[*An able, clear, and condensed review of this important question.*]

38. On the Hæmantlion: An Instrument to facilitate the examination of the Blood in Disease. By H. Dobell, M. D., &c. (From the Journal of the Society of Arts), July, 1857.

[*Highly ingenious, and likely to prove of much value as an aid to the diagnosis of blood diseases.*]

PERIODICALS WITH WHICH THE DUBLIN QUARTERLY JOURNAL IS EXCHANGED.

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1. The British and Foreign Medico-Chirurgical Review and Journal of Practical Medicine. Published Quarterly. London: Churchill. (Received regularly.)

2. The Edinburgh Medical Journal. Published Monthly. Edinburgh: Sutherland and Knox. (Received regularly.)

3. The Retrospect of Medicine, being a half-yearly Journal, containing a retrospective View of every Discovery and practical Improvement in the Medical Sciences. Edited by W. Braithwaite. London: Simpkin and Co. (Received regularly.)

4. The Half-Yearly Abstract of the Medical Sciences, being a practical and analytical Digest of the principal British and Continental Medical Works, &c. Published Half-Yearly. Edited by W. H. Ranking, M. D., and C. B. Radcliffe, M. D. London: Churchill. (Received regularly.)

5. Pharmaceutical Journal and Transactions. Published Monthly. London. Edited by Jacob Bell. (Received regularly.)

6. The London, Edinburgh, and Dublin Philosophical Magazine and Journal of Science. Published Monthly. London: Taylor and Francis. (Received regularly.)

7. The Lancet. A Journal of British and Foreign Medicine, Physiology, Surgery, Chemistry, Criticism, Literature, and News. Edited by Thomas Wakley, Surgeon. Published Weekly. London. (Received regularly.)

8. Medical Times and Gazette. Published Weekly. London: John Churchill. (Received regularly.)

9. Association Medical Journal. Edited by A. Wynter, M. D. Published Weekly. London: Honeyman. (Received regularly.)

10. The Medical Circular. Published Weekly. London: Harris. (Received regularly.)

11. The Journal of Psychological Medicine and Mental Pathology. Edited by Forbes Winslow, M. D. Published Quarterly. London: Churchill. (Received regularly.)

12. The Asylum Journal of Mental Science. Edited by J. C. Bucknill, M. D. London: Longmans. (Received regularly.)

13. The Glasgow Medical Journal. Published Quarterly. Griffin and Co. (Received regularly.)

14. The Athenæum—Journal of English and Foreign Literature, Science, &c. Published Weekly. London. (Received regularly.)

15. The Dublin Medical Press. Published Weekly. (Received regularly.)

16. The Dublin Hospital Gazette. Published twice a Month. (Received regularly.)

17. The Natural History Review: including the Transactions of the Irish Natural History Societies, and of the Geological Society of Dublin. Published Quarterly. Dublin: Hodges, Smith and Co. (Received regularly.)

INDIA.

18. The Indian Annals of Medical Science; or, Half-Yearly Journal of Practical Medicine and Surgery. Calcutta: Lepage and Co. (No. VII. received.)

19. Transactions of the Medical and Physical Society of Bombay. Printed at the Bombay Education Society's Press. (Received No. 3, New Series.)

AUSTRALIA.

20. The Australian Medical Journal. Melbourne: Buzzard. Published Quarterly. (Received No. 5.)

AMERICA.

21. The American Journal of the Medical Sciences. Edited by Isaac Hays, M. D. Published Quarterly. Philadelphia: Blanchard and Lea. (Received regularly.)

22. The North American Medico-Chirurgical Review. A Bi-monthly Journal. Edited by S. D. Gross, M. D., and T. G. Richardson, M. D. Philadelphia: Lippincott and Co. (Received regularly.)

23. The New York Journal of Medicine and the Collateral Sciences Edited by S. S. Purple, M. D., and S. Smith, M. D. Published Monthly New York. (No. 1, of Vol. I., and No. 2, of Vol. II., not received.)

24. The American Journal of Science and Arts; conducted by Professors Silliman and B. Silliman, Jun., and J. D. Dana, &c. Published Bimonthly. New Haven. (Received regularly.)

25. The American Journal of Insanity. Published by the New York Stat Lunatic Asylum, Utica, Quarterly. (No. 3, Vol. XIII., not received.)

26. The American Journal of Dental Science. Edited by C. A. Harris, M. D., and A. S. Piggot, M. D. Published Quarterly. Philadelphia: Lindsay and Blakiston. (Received regularly.)

27. The Charleston Medical Journal. Published Monthly. Charleston, U. S. (Received regularly.)

FRANCE.

28. Gazette Médicale de Paris. Published Weekly. Paris. (Received regularly.)

29. Gazette Hebdomadaire de Médecine et de Chirurgie. Published Weekly. Paris: Victor Masson. (Received regularly.)

30. Journal de Chimie Médicale, de Pharmacie, de Toxicologie, et Revue des nouvelles, scientifiques, nationales et étrangères, &c. Published Monthly. Paris: Labé. (Received regularly.)

31. Journal de Pharmacie et de Chimie, &c. Published Monthly. Paris: Victor Masson. (Received regularly).

32. L'Union Médicale, Journal des intérêts scientifiques et pratiques, moraux et professionels du Corps médical. Published three times a Week. Paris. (Received regularly.)

33. La Lancette Française, Gazette des Hôpitaux civils et militaires. Published three times a Week. Paris. (Received regularly.)

34. Le Moniteur des Hôpitaux, Revue Médico-Chirurgicale de Paris. Redacteur en chef: M. H. de Castelnau. Paris. Published three times a Week. (Received regularly.)

35. Revue Médicale Française et étrangère, Journal des Progrès de la Médecine Hippocratique. Published twice a Month. Publié par le Docteur Sales-Girons. Paris. (Received regularly.)

36. Archives Générales de Médecine; Journal Complémentaire des Sciences Médicales. Published Monthly. Paris: Labé. (Received regularly.)

37. Bulletin de l'Académie de Médecine. Published Monthly. Paris: Baillière. (Received Vol. XXI.)

38. Mémoires de l'Académie de Médecine. (Received regularly.)

39. Revue de Thérapeutique Médico-Chirurgicale. Published twice a Month. Paris: Dr. A. Martin-Lauzer. (Received regularly.)

40. Journal de Médecine et de Chirurgie Pratiques a l'Usage des Médecins. Published Monthly. Par Lucas-Championnière. Paris. (Received regularly.)

41. Journal des Connaissances Médicales pratiques et de Pharmacologie. Published every ten days. Paris. (Received regularly.)

42. Annales Médico-Psychologiques. Par MM. Baillarger, Cerise, et Moreau. Published Quarterly. Paris: Victor Masson. (Received regularly.)

43. Bulletin Général de Thérapeutique, Médicale et Chirurgicale. Recueil pratique. Par le Docteur Debout. Published twice a Month. Paris. (Received regularly.)

44. Repertoire de Pharmacie. Recueil pratique. Par M. le Dr. Bouchardat. Published Monthly. (Received regularly.)

45. Gazette Médicale de Strasbourgh. Published Monthly. (Received regularly.)

46. Revue Thérapeutique du Midi, &c. Par le Dr. Louis Saurel. Published twice a Month. Montpellier. (Received regularly.)

47. Journal de Médecine de Bordeaux. Redacteur en chef, M. Costes Published Monthly. (Received regularly.)

48. L'Union Médicale Gironde. Bordeaux. Published Monthly. (Received regularly.)

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49. Annales D'Oculistique. Fondées par le Docteur Florent Cunier. Published Monthly. Brussels. (Received regularly.)

50. Annales et Bulletin de la Société de Médecine de Gand. Published Monthly. (Received regularly.)

GERMANY.

51. Zeitschrift für rationelle Medicin; herausgegeben Von Dr. J. Henle und Dr. C. v. Pfeufer. Published Monthly. Heidelberg and Leipzig: C. F Winter. (Received regularly.)

52. Zeitschrift der Kais. Kön. Gesellschaft der Aerzte zu Wien. Redacteur: Professor, Dr. Ferdinand Hebra. Vienna: Gerold. (No. 12, for 1853, Nos. 3, 4, 6, 9, 10, 11, for 1854, No. 1 for 1856, and Nos. 1 and 2 for 1857, not received.)

53. Vierteljahrschrift für die praktische Heilkunde, herausgegeben von der medicinischen Facultät in Prag. Published Quarterly. Prague: Karl. André. (Received regularly.)

54. Canstatt's Jahresbericht über die Fortschritte der gesammten Medicin in allen Ländern. Redigirt von Pr. Scherer, Pr. Virchow, und Dr. Eisenmann. Würzburg: Stahel. (Received regularly.)

55. Journal für Kinderkrankheiten. Herausgegeben von Dr. Fr. J. Behrend und Dr. A. Hildebrand. Published Monthly. Erlangen: Palm and Enke. (Parts 3 and 4, 1854, 1 and 2, 1855, and 2, 1856, not received.)

56. Wochenblatt der Zeitschrift der Kaiserl. Königl. Gesellschaft der Aerzte zu Wien. Published Weekly. Vienna: Gerold. (Received regularly.)

57. Aerztliches Intelligenz-Blatt. Organ für Bayerns Staatliche und öffentliche Heilkunde. Munich: C. Kaiser. (Received regularly.)

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58. Archiv für pathologische Anatomie und Physiologie, &c., Herausgegeben von R. Virchow. Berlin: G. Reimer. Published Monthly. (Received regularly.)

HOLLAND.

59. Nederlandsch Lancet. Gravenhage: Noordendorpe. (Received regularly.)

NORWAY.

60. Norsk Magazin, for Lægevidenskaben, udgivet af det medicinske Selskab i Christiania. Redigeret af W. Boeck. Faye. A. W. Münster. Lund. Voss. Published Monthly. Christiania: Feilberg & Landmark. (Received regularly.)

SWEDEN.

61. Hygiea, Medicinsk och Pharmaceutisk Månads-Skrift. Published Monthly. Stockholm. (No. 4, 1857, not received.)

DENMARK.

62. Bibliothek for Læger. Udgivet af Direktionen for det Classenske Literaturselskab. Redigeret af Dr. E. Dahlerup. Copenhagen: Reitzels. (Received Vol. IX., No. 1.)

ITALY.

63. Gazzetta Medica Italiana Federativa Toscana. Florence. Published Weekly. (Received regularly.)

64. Bulletino delle Scienze Mediche. Publicato per cura della Società Medico-Chirurgica di Bologna. Published Monthly. (No. 2 for 1855, and Nos. 5, 6, 7, 11, and 12, for 1856, not received.)

65. Giornale Veneto di Scienze Mediche. Published Monthly. (Received regularly.)

Books and Periodicals published in Northern Europe and the German States, intended for our Journal, should be transmitted "For the Editor of the Dublin Quarterly Medical Journal, care of Messrs. Trübner and Co., London," *through their Correspondents* in the principal Towns on the Continent. Our Correspondents in France, Belgium, Italy, and Spain, are requested to communicate with us through "Doctor Higgins, 212, Rue Rivoli, Paris."

THE

DUBLIN QUARTERLY JOURNAL

OF

MEDICAL SCIENCE.

Contents.

No. XLVIII.—NOVEMBER 1, 1857.

PART I.—ORIGINAL COMMUNICATIONS.

Page.

ART. IX.—Reports in Operative Surgery. By RICHARD G. H. BUTCHER, Esq., M. R. I. A., F. R. C. S. I., Examiner in Surgery in the Royal College of Surgeons in Ireland; Surgeon to Mercer's Hospital; and Lecturer on Clinical Surgery, &c. &c. . . 257

1. Successful Excision of the Knee-Joint, ... 257
2. Successful Excision of a Large Portion of the Femur, . . 266
3. On Fatal Bleeding in Psoas Abscess from Ulceration of the Cava, ... 271
4. Ligature of the Popliteal Artery, ... 273
5. On the Treatment of the Suppurative Crisis of Joints by Free Incision, ... 277
6. Successful Excision of a Large Part of the Upper Portion of the Tibia, ... 279

ART. X.—On Cartilaginous Tumours of the Upper Jaw. By DR. OSCAR HEYFELDER, Private Lecturer on Surgery and Ophthalmic Medicine in the University of Munich; Member of the Academy of Naturalists at Breslau, and the Academy of Surgery at Madrid; of the Medical Societies at Vienna, Paris, Leipzig, Munich, Strasburgh, Brussels, Erlangen, Valencia; of Legal Medicine in Baden; and of the Surgical and Anatomical Society at Paris, ... 282

ART. XI.—Essays on the Natural History of Syphilis. No. IV. By WILLIAM HENRY PORTER, M. D., Professor of Surgery in the Royal College of Surgeons in Ireland; Surgeon to the Meath Hospital and County of Dublin Infirmary; and Consulting Surgeon to the City of Dublin Hospital; &c. &c., ... 287

Page.

Art. XII.—Observations on the Treatment of Acute and Chronic Abscess by the Method of "Drainage Tubes." By T. Hawkesworth Ledwich, F. R. C. S. I., M. R. I. A.; Lecturer on Surgical Anatomy in the Original School of Medicine, Dublin; and Member of the Surgical and Pathological Societies of Ireland, . 301

Art. XIII.—On Anteflexion of the Uterus considered as a Normal Anatomical Condition. By J. Henry Bennet, M. D., Physician-Accoucheur to the Royal Free Hospital, London, &c., . . . 314

Art. XIV.—Cases of Aneurism of the Popliteal Artery cured by Compression. By R. R. Gelston, L. R. C. S. I., Surgeon to the County Limerick Infirmary, &c. &c.; Thomas H. Babington, M. B., F. and L. R. C. S. I., Surgeon to the County Infirmary, Londonderry; and Richard Sargint, M. B., L. R. C. S. I., Clonmel, ... 317

Art. XV.—Chloroform in Strumous Ophthalmia. Note by Dr. Thorpe to his Essay at page 95, ... 326

Part II.—REVIEWS AND BIBLIOGRAPHICAL NOTICES.

1. Insanity, and Hospitals for the Insane, ... 327

i. Eighth Report of the Inspectors on the District Criminal and Private Lunatic Asylums in Ireland. With Appendices. Presented to both Houses of Parliament by Command of Her Majesty. Blue Book.

ii. Eleventh Report of the Commissioners in Lunacy to the Lord High Chancellor of England. With Appendices. Ordered by the House of Commons to be printed, July 7, 1857, in return to an Order of the Honourable the House of Commons, dated June 23, 1857. (Colonel Clifford.) Blue Book.

iii. Report by Her Majesty's Commissioners appointed to inquire into the state of Lunatic Asylums in Scotland. Presented to both Houses of Parliament by Command of Her Majesty. Blue Book.

iv. The Asylum Quarterly Journal of Mental Science. Published by authority of the Association of Medical Officers of Asylums and Hospitals for the Insane. Edited by Charles Bucknill, M. D. Lond., Physician-Superintendent of the Devon County Hospital for the Insane.

v. The Journal of Psychological Medicine and Mental Pathology. Edited by Forbes Winslow, M. D., D. C. L., President of the Association of Medical Officers of Asylums and Hospitals for the Insane. Nos. 5, 6, 7, and 8, New Series, for the Year 1857.

vi. The American Journal of Insanity. Edited by the Officers of the New York State Asylum. Nos. for July, 1856, and April, 1857.

Page.

Insanity, and Hospitals for the Insane—*continued.*

vii. Notes on Belgium Lunatic Asylums, including the Insane Colony of Gheel. By John Webster, M. D., F. R. S.

viii. Twenty-seventh Annual Report of the Belfast District Hospital for the Insane, to March 31, 1857. By Robert Stewart, M. D., Physician-Superintendent.

ix. Second Annual Report of the Sligo District Hospital for the Insane, to March 31, 1857. By John M'Munn, M. D., Physician-Superintendent.

x. Sixth Annual Report of the Wilts County Hospital for the Insane, for the Year 1856. By John Thurnam, M. D., Physician-Superintendent.

xi. Seventeenth Annual Report of the Crichton Royal Institution for the Insane at Dumfries. By W. A. F. Browne, M. D., Physician-Superintendent.

xii. Twenty-seventh Annual Report of the Aberdeen Royal Hospital for the Insane, to March 31, 1857. By Robert Jamieson, M. D., Physician-Superintendent.

xiii. Thirtieth Annual Report of the Perth Royal Hospital for the Insane, to June, 1857. By Lauder Lindsay, M. D., Physician-Superintendent.

xiv. Report of the Pennsylvania Hospital for the Insane, for the Year 1856. By Thomas S. Kirkbride, M. D., Physician-Superintendent.

2. Manuale Completo Di Ostetricia per gli Studenti Medicina e Chirurgia e per le Levatrici. Del Dr. Vincenzo Balocchi, &c. Con 146 figure intercalate nel Testo, ... 390

A Complete Manual of Obstetricy, for Students in Medicine and Surgery, and for Midwives. By Dr. Vincenzo Balocchi.

3. Lærebog i Födselsvidenskaben for Jordemadre. Ved Dr. F. C. Faye, Professor i Födselvidenskab; Fruentimmer og Börnesygdomme ved Universitetet, Overlæge ved Födselsstiftelsen og Bestyrer af Jordemoderskolen i Christiania. Andet Oplag. (Omarbeidet og foroget.) Med 39 i Texten indtrykte Tegninger, ... 393

A Manual of Obstetric Science for Midwives. By Dr. F. C. Faye, Professor of Midwifery and the Diseases of Women and Children in the University; Principal Physician to the Lying-in Institution; and Director of the School of Midwifery in Christiania. Second Edition. Revised and enlarged; with thirty-nine woodcuts inserted in the text.

4. Die Kindheit des Menschen. Ein Beitrag zur Anthropologie und Psychologie. Von Dr. Oskar Heyfelder, Privatdocenten an der Universität zu München, ... 394

The Childhood of Man. A Contribution to Anthropology and Psychology. By Dr. Oscar Heyfelder, Private Lecturer in the University of Munich.

Page.

5. Cholera in the Black Sea Fleets in 1854–55, ... 395

i. Notes on the Cholera at Varna in 1854, and more especially in Her Majesty's ship "Agamemnon," in the Black Sea, between the 1st August, 1854, and 8th September, 1855. By George Mackay, M. D., &c., Staff Surgeon, Royal Naval Hospital, Plymouth, &c.

ii. A Copy of the Medical Statistical Returns of the Baltic and Black Sea Fleets, during the years 1854 and 1855. Ordered by the House of Commons to be printed, 27th February, 1857.

6. Syphilization and Vaccination, ... 400

i. Discussion i det Norske Medicinske Selskab i Christiania angaaende Syphilisationen. (Copie af Norsk Magazin for Lægevidenskaben.)

Discussion in the Norwegian Medical Society of Christiania on the Subject of Syphilization. (Extracted from the Norwegian Magazine of Medical Science.)

ii. Undersögelser angaaende Inoculation af Vaccine-og Chankermaterie, for at constatere Immunitetsforholdene og deres Consequentser. Ved Dr. F. C. Faye, Professor i Accouchement, Fruentimmer- og Börnesygdomme ved Universitetet; Overlæge ved Födselsstiftelsen og Börnehospitalet i Christiania. (Copie af Norsk Magazin for Lægevidenskaben.)

Investigations concerning the Inoculation of the Matter of Cowpock and of Chancre, with a view to establish the conditions of immunity, and their consequences. By Dr. F. C. Faye, Professor of Midwifery, and of the Diseases of Women and Children, in the University of Norway; Principal Physician to the Lying-in Institution, and to the Hospital for Children at Christiania. (Extracted from the Norsk Magazin for Laegevidenskaben.)

7. Recent Swedish Medical Literature, ... 407

i. Kort öfversigt af epidemiska sjukdomar i Sverige under år 1855. Af Dr. A. Timoleon Wistrand. (Aftryck utur Hygiea.)

A brief Review of the Diseases Epidemic in Sweden during the year 1855. By Dr. A. Timoleon Wistrand. (Reprinted from the Hygiea.)

ii. Infusorier, såsom Intestinaldjur hos Menniskan. Af Prof. Dr. P. H. Malmsten. (Med 1 planche.)

On the Occurrence of Infusoria as Intestinal Animalcules in Man. By Professor P. H. Malmsten. (With a Plate.)

iii. Undersöknings-metoder och reaktions-prof som begagnas vid det Kemiskt-Patologiska Laboratorium i Wien, medd. Af Dr. N. P. Hamberg. (Aftryck utur Hygiea.)

On the Modes of Investigation, and on the Tests employed in the Chemico-Pathological Laboratory in Vienna. Communicated by Dr. N. P. Hamberg. (Reprinted from the Hygiea.)

Page.

Recent Swedish Medical Literature—*continued.*

iv. Om Komjölk och dess Grädda. Af Dr. N. P. Hamberg. Aftryck ur Arrhenii Tidskrift för Landtmanna- och Kommunal-Ekonomien för 1856, 4de häftet. Upsala, Wahlström och C.

On Cow's Milk and its Cream. By Dr. N. P. Hamberg. Reprinted from the Fourth Number for 1856 of Arrhenius' Journal of Agricultural and Social Economy.

8. Observations on the Report of the Sanitary Commissioners in the Crimea during the years 1855 and 1856. By Sir John Hall, M. D., K. C. B.; Inspector-General of Hospitals, ... 412

9. Elements of Pathological Anatomy. By Samuel D. Gross, M. D., Professor of Surgery in the Jefferson Medical College, Philadelphia; and formerly Professor of Pathological Anatomy in the Medical Department of the Cincinnati College. Third Edition, ... 415

10. Fiske Fund Prize Essays, ... 431

i. The Effects of Climate on Tuberculous Disease. By Edwin Lee, M. R. C. S. London.

ii. The Influence of Pregnancy on the Development of Tubercles. By Edward Warren, M. D., of Edenton, N. C.

11. How to Work the Microscope. A Course of Lectures. By Lionel S. Beale, M. B., F. R. S., ... 437

12. On the Expediency of instituting an Academy of Medicine in England; illustrated by the prevailing opinions and practice respecting the use of Chloroform in Operations. By James Arnott, M. D., ... 441

13. The Science and Art of Surgery. Being a Treatise on Surgical Injuries, Diseases, and Operations. By John Erichsen, Professor of Surgery in University College. Second Edition, enlarged and carefully revised. Illustrated by 400 Engravings on Wood, ... 442

Part III.—MEDICAL MISCELLANY.

Proceedings of the Dublin Obstetrical Society:—

Dr. T. Hayden's Case of Puerperal Scarlatina, ... 443
Dr. French's Case of Quadruplet Births, ... 445
Dr. Aveling on the Excitation of Fœtal Movements by Cold, ... 447
Dr. M'Clintock on a new Symptom of Rupture of the Uterus, ... 450
Dr. George Montgomery's Case of Craniotomy, . . . 451

Proceedings of the Belfast Medical Society:—

Dr. Murney's Case of Popliteal Aneurism, ... 451
Mr. Browne's Case of Melanosis Oculi, ... 453

Page.

Proceedings of the Belfast Medical Society—*continued.*

Mr. Browne's Cases of Fractured Bones, ... 458
Mr. Browne's Case of Railway Injury, ... 459
Dr. Corry's Case of Traumatic Tetanus, ... 461
Mr. Browne's Cases of Gunshot Wounds, ... 462
Mr. Browne's Case of Fibrous Tumour of the Neck, . . 464
Dr. Murney's Case of Fatal Injury from a Fall, . . . 466

Selections from Foreign Periodicals:—

On Myopathic Paralysis (from a forthcoming work, entitled, Clinical Observations on, and Illustrations of, Muscular Paralysis). By Dr. Hermann Friedberg, ... 469

On a Case of Manifold Neuromas, with a Remarkable Local Tendency to Relapse. By Rud. Virchow, . . . 474

Rare Case of Fracture of the Sternum occurring during Labour; with Observations. By Drs. Francesco Lucchetti and Giuseppe Posta, ... 477

Physiological and Toxicological Investigations concerning Curare. By Professor E. Pelikan, of St. Petersburgh, 480

On Effusions of Blood in the Tissue of the Valves of the Heart. By Professor H. Luschka, of Tübingen, . . 486

On a Case of two Lumbricoid Worms which had penetrated during life into the Liver, and were demonstrated by Professor Giorgio Pellizzari to his Pupils in the School of Pathological Anatomy of Florence. Read before the Florentine Medico-Physical Society on the 3rd May, 1857. By Dr. Raffaello Mattei, Assistant to the Professor, ... 490

Memorandum on the Use of Biniodide of Mercury, in combination with the Rays of the Sun, for the Cure of Goitre. Communicated by F. J. Mouat, M. D., F. R. C. S., Inspector of Gaols and Dispensaries, Bengal, ... 500

Index to Vol. XXIV., ... 505

BOOKS RECEIVED.

1. Manuale Complet di Ostetricia, per gli Studenti Medicina e Chirurgia e per le Levatrice. Del Dottor Vincenzo Balocchi, Professore di Ostetricia, &c. &c. Firenze, Steininger, e Roma, Petiti e Co. 1856. Fcap. 8vo. pp. 894.

2. On Mineral Waters; their Physical and Medicinal Properties, with Descriptions of the different Mineral Waters of Great Britain and the Continent, and directions for their Administration. By R. M. Glover, M. D., &c. London: Renshaw, 1857. Post 8vo. pp. 375.

3. A Key to the Adulteration of our Daily Food. Compiled by W. Dalton. London: Marlborough and Co., 1857. Fcap. 8vo. pp. 184.

4. The Druggist's General Receipt Book; comprising a Copious Veterinary Formulary, Numerous Recipes in Patent and Proprietary Medicines, &c. &c. By Henry Beasley. Fourth Edition. London: Churchill, 1857. 16mo. pp. 503.

5. Hydropathy ; or, the Natural System of Medical Treatment. An Explanatory Essay. By E. W. Lane, M. D. London: Churchill, 1857. Post 8vo. pp. 132.

6. Kort Öfversigt af epidemiska sjukdonar i Sverige under år 1855. Af Dr. A. T. Wistrand. Pamphlet, pp. 23.

7. Second Annual Report of the Sligo District Lunatic Asylum for the Counties of Sligo and Leitrim. By John M'Munn, M. D., Resident Physician, Sligo. Gillmor, 1857. Pamphlet, pp. 52.

8. Elements of Pathological Anatomy. By Samuel D. Gross, M. D., &c. Third Edition. Illustrated by 342 Engravings on Wood. Philadelphia: Blanchard and Lea, 1857. 8vo. pp. 771.

9. On the Medical Estimate of Life for Life Assurance. By Stephen H. Ward, M. D., London, &c. London: Churchill, 1857. Post 8vo. pp. 71.

10. Report on the Origin of the Yellow Fever in Norfolk during the Summer of 1855. Made to City Councils by a Committee of Physicians. Richmond Va, U.S., 1857. Pamphlet, pp. 44.

11. An Elementary Course of Botany, Structural, Physiological, and Systematic. With a brief Outline of the Geographical and Geological Distribution of Plants. By A. Henfrey, F.R.S., &c. London: Van Voorst, 1857. 12mo. pp. 702.

12. Observations on the Report of the Sanitary Commissioners in the Crimea, during the years 1855 and 1856. By Sir John Hall, M.D., K.C.B., Inspector-General of Hospitals. London: Clowes and Son, 1857. 8vo. pp. 64.

13. Fiske Fund Prize Essays. The Effects of Climate on Tuberculous Diseases. By E. Lee, F.R.S., &c. The Influence of Pregnancy on the Development of Tubercles. By E. Warren, M. D. Philadelphia: Blanchard and Lea, 1857. 8vo. pp. 73 and 42.

14. Transactions of the Medical Society of King's College, London. Vol. I. Winter Session, 1856–7. London: R. Born, 1857. 8vo. pp. 247.

15. Die Kindheit des Menschen. Ein Beitrag zur Anthropologie und Psychologie. Von Dr. Oscar Heyfelder, Privat-docenten an der Universität zu München. Erlangen: Enke, 1857. 8vo. pp. 92.

16. Twenty-seventh Annual Report of the Belfast District Hospital for the Insane, 1857. Pamphlet, pp. 47.

17. The Use of the Microscope in Clinical Medicine. Illustrated. By L. S. Beale, M.B., F.R.S., &c. No. 1, Urinary Deposits. With 14 Plates, containing upwards of 60 Figures. London: Churchill, 1857. 8vo. pp. 32.

18. Suggestions for Observations on the Influence of Cholera and other Epidemic Poisons on the Lower Animals. By W. L. Lindsay, M. D. (Reprint.) Pamphlet, pp. 15.

19. On the Expediency of Instituting an Academy of Medicine in England: illustrated by the Prevailing Opinions and Practice respecting the Use of Chloroform in Operations. By James Arnott, M. D. London: Churchill, 1857. Pamphlet, pp. 16.

20. Discussion i det Norske Medicinske Selskab i Christiania angaaende Syphilisationen. Christiania: Wegner and Co., 1857. 8vo. pp. 162.

21. Infusorier Sasom Intestinaldjur Hos Menniskan. Af Prof. Dr. P. H. Malmsten (Med 1 Planche). Stockholm, 1857. Norstedt & Söner. Pamphlet, pp. 14.

22. Notes on the Cholera at Varna in 1854, and more especially in Her Majesty's Ship Agamemnon in the Black Sea. Between August, 1854, and September 8, 1855. By G. Mackay, M. D., &c. Reprint. Pamphlet, pp. 43.

23. Baltic and Black Sea Fleets. A Copy of the Medical Statistical Returns of the Baltic and Black Sea Fleets during the years 1854 and 1855. Parliamentary Return. Folio, pp. 115.

24. England and France before Sebastopol, looked at from a Medical Point of View. By C. Bryce, M. D., &c. London: Churchill, 1857. 8vo. pp. 124.

25. How to Work with the Microscope. A Course of Lectures on Microscopical Manipulation, and the Practical Application of the Microscope to Different Branches of Investigation. By Lionel L. Beale, M. B., F. R. S., &c. London: Churchill, 1857. Fcap. 8vo. pp. 124.

26. Gastro-Colic Fistula: a Collection of Cases and Observations on its Pathology, Diagnosis, &c. By C. Murchison, M. D., &c. Reprint. 1857. Pamphlet, pp. 35.

27. A Case of Exsection of the entire Os Calcis. By J. M. Carnochan, M. D., &c. Reprint. New York, 1857. Pamphlet, pp. 8.

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33. The British Journal of Homœopathy. No. LXXII. October 1, 1857.

34. Die Resection des Oberkiefers; eine Monographie. Von Dr. Oscar Heyfelder, &c. &c. München. Berlin, Reimer, 1857. Reprint. Pamphlet, pp. 113.

35. Föresläsnigar in Patologisk Anatomi. Af Prof. Gustav von Düben, Första Haftet. Stockholm: Norstedt and Son, 1857. Pamphlet, pp. 127.

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Yours very truly

Robt Adams

THE DUBLIN

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OF

MEDICAL SCIENCE.

AUGUST 1, 1857.

PART I.

ORIGINAL COMMUNICATIONS.

ART. I.—*Puerperal Fever.*[a] By EDWARD WILLIAM MURPHY, A. M., M. D., Professor of Midwifery, University College, London.

PUERPERAL fever has been so frequently the object of medical inquiry, has excited so much controversy, called forth so many monographs, and has baffled so completely the elaborate researches of eminent members of our profession, that one feels no little hesitation in entering upon such a subject. This malady might well have been suffered to remain among the arcana of medical science, were it not that it holds an intimate relation to those sanitary questions which at present so much occupy public attention. For this reason I have ventured again to bring it forward; and if I fail in throwing any new light upon questions connected with this frightful disease, I must only ask some indulgence, which will be, perhaps, the more readily granted, inasmuch as so many of my predecessors have been in a like predicament.

Locke, in his Essay on the Human Understanding, when treating of the use of words, and the necessity of strictness in

[a] Read before the Epidemiological Society.

their application, relates an anecdote in illustration of his argument. He was present when three other physicians were engaged in a warm controversy on the animal spirits (the circulation of the blood was not then acknowledged). In the heat of the dispute, Locke ventured to ask what they meant by "the animal spirits." None could define the terms which they so freely used. Locke thought it would be as well to agree upon what we mean by a term before we argue about it. So it is with puerperal fever. It is very necessary to define what we mean by this expression before we discuss the important questions connected with it, which is the more essential because there is a complete contradiction in the terms used to signify this disease. Some authors adhere to the term "puerperal fever," and describe every form, from the simple inflammatory to the typhoid or asthenic fever. Others discard this expression completely, and consider it to be an inflammation affecting different tissues; hence the names, "puerperal peritonitis," "puerperal phlebitis," "puerperal arthritis," &c. It is obviously important to determine this preliminary question, because our knowledge of the correct principles of treatment depends very much upon a clear notion of the disease we are endeavouring to subdue. Have we to treat a fever, or to combat an inflammation? Are we quite sure that either of these terms conveys an idea correctly of the essential characters of what might be, perhaps, called, more consistently with facts, the puerperal plague? In order to arrive at a just conclusion, we shall endeavour to prove, by a process of negation, what, at least, puerperal fever is not, although we cannot promise to succeed in establishing the affirmative, and proving what this disease really is.

First, then, we deny the correctness of the term, "puerperal peritonitis," and feel assured that by applying it to this disease we fall into some very serious mistakes.

Peritonitis is not a disease which can *seipso* be communicated; puerperal fever can. Hence, by calling this disorder by a wrong name, our attention is drawn away from its most dangerous—its contagious character. We speak of it as peritonitis: nor is it until we find the peritonitis spreading from patient to patient that we take alarm, and at length discover that we are treating a different disorder. It is treated as peritonitis, and the result proves that our treatment has not the slightest effect. This error also causes great confusion in sanitary reports. Puerperal fever may prevail in a locality where the name is never heard. The Registrar-General tabulates deaths under the heads, "peritonitis," "phlebitis," "arthritis," &c. &c. The proportion of these inflammations is

thus increased at the expense of this malady, and his returns are deranged.

Puerperal fever does not agree with peritonitis either in the mode of its attack, in its symptoms, in its morbid appearances, or in the influence of remedial agents upon it. Inflammation of the peritoneum can generally be traced to some obvious cause. If after severe labour, inflammation, which commenced in the passages, may extend to the uterus, and thence to the peritoneum; or perhaps the uterus may become inflamed in its reaction, after the refrigeration and other means necessary to control violent flooding; hence peritonitis, or rather, metro-peritonitis.

But when we find peritonitis appearing quite suddenly, after, perhaps, a perfectly easy labour, when the most careful attention has been given to the patient, and no possible cause to excite it exists,—when the inflammation advances with a rapidity and an intensity almost incomprehensible, the conclusion is obvious, that the nature of the complaint is something more than inflammation; the mode of its attack betrays an obvious difference.

The symptoms in parallel cases are not the same. Peritonitis commences in the neighbourhood of the uterus; the pain is first felt there. The pain in puerperal fever frequently commences in the epigastrium, and the diaphragm may be the first engaged; violent stitches through the ribs are often one of its earliest symptoms, and precede distention of the abdomen. Headach is not a symptom of peritonitis; it is constantly met with in puerpural fever. The most remarkable difference, however, may be observed in the effect produced on the digestive organs. In peritonitis the action of the bowels is suspended; constipation is the result, and often so obstinate as to resist very powerful purgatives. A violent diarrhœa is frequently the first symptom of puerperal fever. Vomiting may occur in both; but, like diarrhœa, may be a first and most urgent symptom in puerperal fever, which is never the case in inflammation of the peritoneum.

When this scourge is in its maximum of intensity, we are not left to such distinctions as these to determine its nature, because, in some of the very worst cases, there is no symptom of peritonitis at all. A case has fallen under my notice, in which the abdomen was perfectly soft, free from pain on pressure, and not the slightest symptom of inflammation in the peritoneum or anywhere else; yet this patient was so completely under the influence of this fever, that she died in twelve hours from the first symptom of the attack, and after death the usual

sero-purulent effusion was met with in the abdomen. The intestines were covered with the creamy exudation commonly observed.

The *post-mortem appearances* do not agree with those which are the result of pure peritonitis. It is necessary, however, to recollect, the same caution is necessary in determining the *nature* of a disease by post-mortem appearances ; it is sometimes forgotten that these changes are *the results* of the disease, not the disease itself ; that their presence or absence do not of necessity prove the presence or absence of their supposed cause, and that identity of effect by no means proves one and the same cause. Adhesive lymph, and consequent union of parts, are considered as the results of inflammation ; we are now, however, on the way to discover that these changes may take place without any inflammation. In the very worst forms of puerperal fever, death has taken place without any morbid change in the abdomen, unless, indeed, great distention of the veins be considered as such. In other cases, as in that alluded to, the usual morbid appearances are observed, and yet no corresponding symptoms of inflammation; and again, there are cases in which adhesive lymph, the result of inflammation, and non-plastic lymph, the result of this fever, are so mixed up as to cause great confusion in determining the disease. Patients who have died suddenly of ruptured uterus afforded me the opportunity of witnessing the morbid appearances caused by peritonitis in its first and most active stage, and before their character was modified by those changes which result from the gradual exhaustion of the powers of life. They were nearly as follows :—

A moderate quantity of bloody serum filled the abdomen; the intestines were united to each other and to the uterus by an opaque glutinous medium; when separated, this was drawn out into strings, like glue, the true lymph of inflammation. The intestines were streaked here and there by florid lines of capillaries, and the general appearance of the peritoneum was opaque, having lost its shining character; the intestines were distended with air. If such appearances be compared with those constantly observed in puerperal fever, some doubt may perhaps arise that peritonitis and puerperal fever are one and the same disease. When the abdomen is opened, an immense quantity of lactescent fluid escapes ; the intestines are fringed with a cream-coloured exudation, which collects in the angles formed by their folds. This substance dissolves into a fluid like pus. The same exudation is found covering the uterus, the liver, the spleen ; nor is it confined to the peritoneum, hav-

ing been observed sometimes also in the pleura. The intestines present a livid appearance, traversed by dusky red lines of capillaries, very different from their florid aspect in peritonitis. This creamy exudation is not in the least adhesive, but can be peeled off the intestines quite easily, leaving a dusky livid surface. The only points of agreement in the post-mortem appearances are, the absence of a glossy surface, and the presence of tympanitis.

The distinction pointed out between the post-mortem appearances of puerperal fever and peritonitis is open to the objection that there are certain cases of acknowledged peritonitis which present precisely the characters which have been ascribed to puerperal fever; there is the same lactescent fluid, &c., &c. This may be true; but it may be asked, At what stage of the inflammation was the examination made? because, if made, as is generally the case, in the second stage, when the patient sinks under the attack, and death does not carry her off in the middle of it, as in ruptured uterus, these appearances may be rather evidences of exhausted power than of inflammation, and thus agree with those produced by puerperal fever; but there is this essential difference, that in the latter this effect is observed *ab initio* in patients who have at once succumbed to the attack, without any evidence of inflammation; in the former, it is only when the constitution gives way in a manifest struggle, well marked by symptoms. In peritonitis there is always adhesive lymph; in puerperal fever frequently nothing of the kind.

The most important difference, however, between these diseases and that which, perhaps, the most concerns us, is the effect of treatment. Let us take, for example, the most popular remedies for inflammation of the peritoneum,—depletion, mercury, opium.

Depletion in puerperal fever is a much disputed question. Some are the warm advocates, others the equally zealous opponents, of the practice, but it is worthy of notice that, in this controversy, those who applaud depletion recommend twenty, thirty, even fifty ounces of blood to be taken,—a quantity which would be fatal in peritonitis, inasmuch as in some of the severer forms of this inflammation we cannot bleed at all.

Peritonitis arising from the escape of fæcal matter into the intestines—from the bursting of an abcess into the peritoneal cavity—from ruptured uterus, or if it should follow the operation of paracentesis in debilitated subjects—will not admit of depletion, because of the depressing influence of the constitutional shock; but in parallel cases of puerperal fever, in which

the powers of life are equally prostrate, Mackintosh recommends a large bloodletting, and in order to adapt his theory to his facts, he calls this condition "*latent peritonitis*,"—peritonitis without its symptoms! This inflammation has laid prostrate the powers of the constitution, and depletion, by subduing it, restores them. Such is the theory, but it is obvious that when peritonitis has such an effect, depletion is impossible, and, therefore, we must seek some other explanation of its reported success in the cases quoted by Mackintosh. That which we would suggest is, that the principle upon which depletion is beneficial in puerperal fever is different from that in peritonitis, because they are different diseases.

Mercury is a remedy commonly used to control peritonitis. I have found it perfectly useless in the treatment of puerperal fever; my experience is confirmed by Drs. Collins and M'Clintock, both of whom tried it extensively in the Dublin Lying-in Hospital. Dr. Collins remarks:—"It is supposed by some practitioners that when we can get the system under the influence of mercury, recovery is certain. This is not the fact, as I have seen in several cases in which death took place under these circumstances"[a]. In his valuable account of the recent epidemic in the Dublin Lying-in Hospital, Dr. M'Clintock observes, that "mercury was tried in a large proportion of cases, and in various doses, but I cannot say that I ever observed any decided improvement to have been traceable to its specific action on the system. In some cases the disease progressed with such frightful rapidity that absolutely there was no time for the drug to make an impression on the constitution; in other cases mercury seemed to produce diarrhœa, and had, therefore, to be laid aside; in two cases death occurred, notwithstanding that ptyalism had been excited"[b].

Opium is most valuable in that form of peritonitis in which depletion cannot be employed. It is probable that in such cases it acts as a stimulant, and restores nervous energy, impaired by shock, to the constitution. It may have a similar effect in puerperal fever, but opium alone is never sufficient; other agents are combined with it, and with this object *camphor* has been given in very large doses. Dr. Copland has given eight and sixteen grains of camphor combined with opium for a dose.

If this comparison between puerperal fever and peritonitis

[a] Collins' Report, p. 396.

[b] Report of the late Epidemic, 1855, by Dr. M'Clintock, Dublin Quarterly Medical Journal, vol. xix. p. 461.

proves that there is an observable difference in the manner of the attack, the symptoms, in the post-mortem appearances, and the effect of remedies, it follows that it is incorrect to call them by the same name. Designating this plague by the gentler epithet, "peritonitis," becomes a most dangerous misnomer, which we regret to observe so very generally employed.

Acute uterine phlebitis resembles puerperal fever much more nearly than peritonitis, because both are blood diseases; hence it is much more difficult to draw an accurate line of distinction between them, yet it seems to me quite possible. Inflammation of the uterine veins is described as a disease of frequent occurrence; I believe it, on the contrary, extremely rare, because the uterine veins are not easily susceptible of inflammation. If such were the case, uterine phlebitis would be the natural consequence of every severe labour, especially in cases where the child perishes and becomes putrid.

The putrid *débris* of the placenta, pus and such like irritants, would soon light up inflammation in these veins, if they were so irritable as is supposed. The uterine differ from other veins in this respect: they consist only of a lining membrane, which is acknowledged by the most eminent pathologists to be scarcely susceptible of inflammation. In other veins its seat is in the cellular and fibrous, not the lining, coats. Hasse remarks:—"In this respect it will appear not unworthy of notice that those portions of the venous system, which are composed exclusively of the internal membrane of veins, with a very scanty provision of the surrounding cellular tissue—like the corpora spongiosa—*are very rarely, and never extensively, the seat of true inflammation*"[a].

I have witnessed numerous cases of puerperal fever in which the uterine veins were chiefly engaged, but very seldom indeed have I met with cases of true uterine phlebitis. The history of one case will serve to illustrate the rest. Some years ago I was called to a case of violent flooding in Tottenham Court Road, refrigeration was employed, with other means, to arrest the discharge. The following day the patient complained of headach, and had a severe rigor; on the third the tongue was dry and furred; pulse 120. On the fourth it was almost black with sordes; skin burning hot, and jaundiced; pulse 140; no secretion of milk; partial sweats broke out all over the surface, and she was delirious. The treatment pursued gradually subdued these symptoms, but as

[a] Hasse's Pathological Anatomy, p. 11.

she was recovering, she complained of a great pain in the left leg; a swelling was observed in the neighbourhood of the gastrocnemius muscle, which soon increased, and became extremely painful. It was evident that a deep-seated abscess had formed; this was opened, a large quantity of pus was discharged, and she recovered.

This case may be compared with one related by Dr. M'Clintock in his valuable Report of the recent epidemic in the Dublin Lying-in Hospital. It is described thus:—

"Natural labour; phlebitis; arthritis; death.—B. K. was delivered of her second child, after a short and easy labour, on December 18, 1854. The fœtus was small, about the eighth month, hydrocephalic, and *very putrid*. At the moment of its expulsion a quantity of abominably fœtid gas was remarked to escape from the vagina. On the second day she had some slight tenderness over the uterus, without any acceleration of pulse, however. This was removed by a turpentine stupe, and a dose of castor-oil and turpentine.

"*She was very well on the third and fourth days:* the pulse being only 88, and no uneasiness whatever in the uterus. Still, there was but a very scanty secretion of milk, and the tongue was somewhat dry towards its base in the median line. On the fifth day the pulse was 100, but she had no uterine uneasiness of any description, and expressed loud murmurs at not being allowed up. The next day brought no change in her condition, and on the day following she was worse; pulse 110; tongue dry and glazed; no abdominal pain or distress, but complains of a severe pain in the great toe. On examining this, the metatarso-phalangeal joint was found swollen, and the integument of a shining bright red. On moving the toe or pressing the joint, she evinced pain. She only lived to the morning of the eleventh day, notwithstanding that she got wine and brandy freely. For six hours before she died the pulse had entirely ceased in the arms, and the hands were red and cold, *yet she retained entire consciousness*, was fully and acutely alive to all passing around her, and able to move and turn in the bed without any assistance. There was a sort of quickness and excitability in the woman's manner during the last few days of her illness, that is the nearest thing that I have seen to the 'hysteroid excitement' described by Professor Meigs as being a very characteristic attendant upon uterine phlebitis. *This patient had no rigor*"[a].

[a] Account of the recent Epidemic in the Dublin Lying-in Hospital, by Alfred M'Clintock, M. D., as above cited.

The absence of rigor and the presence of the hysteroidal excitement of Meigs seem to me rather to negative phlebitis.

This perfect consciousness on the verge of dissolution, the clear intellect of the patient, and her extraordinary power of motion almost in her last moments, her sense of security, and belief in her recovery just before death, are all characteristics of puerperal fever, but not of phlebitis. In order, however, to place the question in a clearer light, I shall briefly quote the symptoms of phlebitis as given by Mr. Arnott in his valuable paper on this subject:—

"The patient has great restlessness and anxiety; prostration of strength and depression of spirits; sense of weight at the præcordia; frequent sighing, or rather moaning, with paroxysms of oppressed and hurried breathing, the patient being unable at the same time to refer his sufferings to any specific source; the common symptoms of fever are present; the pulse rapid, reaching 130 or 140 in the minute, but in other respects extremely variable; *frequent and severe rigors almost invariably occur;* the general irritability and deep anxiety of countenance increase; the manner is quick; the look occasionally wild and distracted. When left to himself, the patient is apt to mutter incoherently, but, on being directly addressed, becomes clear and collected; the features are shrunk, and the skin of the whole body assumes a sallow or yellow colour. Under symptoms of increasing debility, and at a time when the local affection may appear to be in a great degree subsiding, secondary inflammation of a violent character, and quickly terminating in an effusion of pus or lymph, very frequently takes place in situations remote from the original injury. The cellular substance, the joints, the eye, have been affected, but it is more particularly under a rapidly developed attack of inflammation of the viscera of the chest that the fatal issue usually occurs. Whether this be observed or not, death is *always preceded by symptoms of extreme exhaustion; a rapid, feeble pulse; dry, brown, or black tongue; teeth and lips covered with sordes; haggard countenance; low delirium*"[a]. This is very different from the hysteroid excitement of Meigs, which cannot be considered as diagnostic of uterine phlebitis, unless, indeed, it be assumed that inflammation of the veins of the womb is quite a different disease from inflammation of veins elsewhere. We have given evidence, however, to prove that it is not so, but is, in its leading characters, exactly similar. Dr. M'Clintock's

[a] Medico-Chirurgical Transactions, vol. xv. p. 52.

case is one of blood-poisoning, probably from putrid animal matter; the child was putrid, the discharges from the vagina most offensive; nevertheless she seems to have nearly escaped, because no symptom manifested itself until the fourth day, and then gradually the pulse rose, the tongue became dry, the metatarso-pharyngeal joint swollen, shining red, and painful; depositions of pus, the result of depraved blood, took place in this joint, and the woman might have recovered but that she was in an atmosphere of puerperal fever. It may be considered, therefore, a case of puerperal fever.

There is a very close analogy between the poison of putrid animal matter and that of puerperal fever. The effluvia of Montfaucon and its effects are well known. The Maternité is near to this abattoir, and the presence of puerperal fever or its absence from that hospital seems almost to depend upon the way the wind blows: if from Montfaucon, there is fever; if towards it, the hospital escapes. This fact shows the alliance between the effluvia of putrid meat and the poison of puerperal fever. Another fact, of which I have had painful personal experience, points to the same conclusion. In the winter of 1842 I was called to see a woman in severe labour; inflammation of the uterus was just commencing; the child was dead, the bones of the cranium loose; the head was perforated, and the child with much difficulty extracted. In two hours after, I was again sent for, in consequence of the placenta being retained; it was adherent. In order to extract it, the right hand was first introduced, then the left, and after some trouble it was brought away, quite putrid.

On the day following some pimples appeared on both arms, which soon formed into pustules, one of them assuming, on the fourth day, a very unfavourable aspect. It was surrounded by a deeply livid base. Mr. Liston cut the pustules through, cauterized, and dressed them with water-dressings. This prompt treatment prevented any subsequent mischief. Exactly at the time that these pimples first appeared, symptoms of puerperal fever were noticed in this patient, of which she died on the fourth day.

This case affords clear evidence of the action of the poison of putrid animal matter, producing on my arm pustules of a malignant character, similar to what have been observed among the slaughterers in the south of France, and causing puerperal fever in this patient. Puerperal fever, however, is not an invariable result. A case which may strictly be considered as blood-poisoning from putrid animal matter is related by Mr.

M'Whinnie:—"A case of destructive ophthalmia, with extensive suppuration of the cellular membrane, and severe affection of the knee-joint, occurring after premature delivery."

"In the spring of 1847 Mr. F. Huchison, of Farringdon-street, requested Mr. M'Whinnie to visit Mrs. M., a lady about 40, of spare habit of body, but strong constitution, and active mind. She had been delivered (March 7) of a four-months' child, which had been for some time dead in the uterus, and it was believed that the system was contaminated by the retention of the decomposed fœtus. Much serious indisposition and constitutional disturbance preceded and followed the expulsion of the fœtus. On the second or third day after delivery, the contents of the right orbit became inflamed; we found the globe much more prominent than that of the other eye, and it was apprehended that an abscess might be forming behind the organ. . . . . On the 28th Dr. Fred. Farre visited the patient, and gives the following account of the affected eye. . . . 'The lids were much swollen and closed; considerable rednesss and chemosis of the conjunctiva, but no suppuration. The cornea was prominent, but rather nebulous; the anterior chamber greatly enlarged; the iris, yellow and disorganized from effused lymph, and inclining backwards, adhered to the capsule of the lens; the pupil was filled with the same effusion, vision was entirely gone.' . . . The right lower extremity became stiff and swollen; pitting on pressure, and accompanied by œdema of the foot and labium of that side. Collections of matter were also found in different parts of the limbs; at first principally in the vicinity of the knee-joint, and under the integuments of the back of each forearm above the wrist; that on the left was dispersed by blisters; the other subsiding spontaneously. The calf of the leg also became swollen and tense, and, fluctuation having been discovered, a large quantity of thick pus was evacuated by incision.

"The abscesses about the knee-joint and others in different parts of the limb were opened immediately on being detected; their contents consisting generally of well-formed pus; the integuments were not naturally discoloured. It was evident that the cellular, adipose, and intermuscular tissues were everywhere loaded with sero-purulent infiltration, presenting, when divided with the knife, a greenish-gray colour. On the 12th April the right knee-joint had become the seat of painful swelling from effusion into its cavity, and its several structures suffered from the effects of the most destructive inflammation. . . . An abscess was opened on the outer side of the joint, and

(April 22) Mr. Aston Key opened another above the internal condyle.

"May 23rd. The condition of the patient had now become most deplorable; she was reduced to extreme weakness and emaciation. In addition to her other ailments, she had cough and diarrhœa, and the integuments over the sacrum and in other parts subject to pressure became tender. . . . . After being some time on the hydrostatic bed, from which most essential advantage and comfort were immediately felt, it was ascertained that in consequence of the pelvis having sunk much below the level of the knee, a very considerable accumulation of matter had taken place, so as to form a projecting tumour on the upper part of the thigh. On dividing the fascia"—by a very skilful surgical operation—"an immense quantity of thick pus was discharged. . . . . From this time may be dated a steady and gradual improvement; the appetite, and with it the strength, increased; the discharge from the numerous and extensive abscesses diminished; the limb regained more of its proper outline, and the muscles their tone and power. The knee, still considerably bent, was in a more quiet condition; the eye, reduced to a third of its natural size, had receded to the back of the orbit; the external tissues had not ulcerated. All inflammation in the globe and surrounding structure having ceased, the former was speedily reduced, by the action of the absorbents, to the same dimensions as if the tumours had, as in other cases, escaped by ulceration of the cornea and sclerotica. Mrs. M. is now (Dec. 1847) strong and well"[a].

This case, although condensed, is given sufficiently at length to prove the true character of blood-poisoning, as distinguished both from phlebitis and puerperal fever. Had it been either of these, the complaint would have gone through its stages in as many days as this occupied weeks; besides that the presence of pus is by no means a proof of pre-existing inflammation. It is now admitted by surgical authorities that in these affections of the joints pus may be present without any inflammation. Mr. Coulson observes that in secondary diseases from blood-poisoning "the bones of the joints are never affected, and the joints often contain a quantity of pus, without any trace whatever of inflammation or other lesion."

If this fact be considered in connexion with another, proved by the able researches of Mr. Henry Lee, a just con-

[a] Medico-Chirurgical Transactions, vol. xxxi. p. 65.

clusion may be arrived at on this important point. In his paper on "The Deposition of Fibrine on the lining membrane of Veins," Mr. Lee has proved that the changes generally attributed to the walls of the vein really commence in the coagulum. The jugular vein of a donkey was tied, opened, and emptied of its blood between two ligatures, and filled with wadding: the wound was then closed. The animal was killed forty-eight hours afterwards, and the vein examined. *There was not the slightest trace of inflammation on the lining membrane of the vein between the ligatures.* The lining membrane here was of rather a deeper colour than natural; but in no point did it present any trace of effused lymph"[a]. Had blood been allowed to remain between the ligatures, lymph would have been found on the walls of the vein, clearly proving that this evidence of inflammation was derived from the blood itself, and not from the coats of the vessels. Hence the conclusion, that a coagulum may be formed in a vein, lymph thrown out, and even pus produced, without any previous inflammation in the vein itself. Healthy blood seems to possess this conservative power of securing itself against contamination. If pus be mixed with blood, coagulation instantly takes place; the coagulum becomes adherent to the sides of the veins, inflammation *follows*, and the pus is removed by abscess. If other morbid matters are injected, nearly similar results take place, which are thus described by Mr. Lee:—"If the proportion of morbid matter be large, the whole coagulum will rapidly soften, and present to the naked eye the appearance of pus more or less discoloured. But if the quantity which has become mixed with the blood be small, the coagulum will retain its consistency, and become adherent to the sides of the vessel. Under these circumstances the coagulum will adhere to one side only of the vessel, and, as it contracts, the diameter of the vessel will be restored to its original size. In other cases the outer layer of the coagulum will become adherent to the whole circumference of the vein, and the inner portions, which are always the least consistent, will become softened and broken down. A complete cylinder of fibrin may, in this way, be formed in the interior of a vein, through which (when the fluid portions of the coagulum are removed) the blood will circulate. It is worthy of remark that when plugs of fibrin are thus formed, the adjacent lining membrane of the veins is coloured in exact proportion to the quantity of colouring matter contained in the coagula"[b]. "The opi-

[a] Pathological and Surgical Observations, by Henry Lee, p. 99.
[b] *Op. cit.*, p. 101.

nion that the material found in obstructed veins is derived directly from the blood, is further supported by the fact, that where a coagulum is formed and becomes incorporated with the coats of a vein in one part, the lining membrane of the vessel in its immediate neighbourhood may, nevertheless, present its natural shining appearance[a].

Such are the results of pus or other irritants on healthy blood; but if that irritant be a poison, this conservative force may be completely impaired: the circulation goes on imperfectly, the slightest cause producing stagnation; the blood readily dissolves into pus, which is scarcely circumscribed by the feeble effort at inflammation, and hence large collections of matter are found in almost every tissue where it can form a resting-place. Thus pus, or what is called pus, is found infiltrating the uterus, in the orbit, the joints, inter-muscular tissue, liver, and spleen, and all this without any pre-existing inflammation. Pus in this way produced did not escape the notice of Wedl. In speaking of exudations on the inner coats of veins, he remarks:—"The fact that pus in these cases may be formed from stagnant blood, and more especially from its serum, perhaps no longer admits of doubt, since the metamorphosis of the coagulated blood into a puriform fluid *may be traced from the centre of the plug towards its periphery*"[b]. He again states, speaking of the transition from leucœmia into pyœmia:—"In a well marked case of leucœmia with congestion of the lungs, greatly enlarged liver and spleen, the veins in the plexus choroideus of the brain were as completely filled with a purulent fluid as are the veins of the uterus, *in the affection erroneously termed uterine phlebitis*"[c]. On this point he further observes:—"This notion would accord with the fact that in what is termed phlebitis, the collections of pus coincide with a local stasis of the blood. The term 'phlebitis,' however, is improper, since there is no indication whatever of inflammation of the venous coats"[d]. The fact, then, that in cases of puerperal fever, pus may be found filling the uterine veins, forming abscesses in the orbit, joints, or elsewhere, is no satisfactory proof of uterine phlebitis. Such appearances seem to me dependent upon poisoned blood, not upon inflammation. The tendency of inflammation of the veins is to secure the circulation of pure blood; a poison destroys this power, and hence these effects of poisoned blood extend throughout the whole circulation, showing themselves wherever a stasis of

[a] *Op. cit.* p. 102.
[b] Wedl, Pathological Histology, p. 233.
[c] *Op. cit.*, p. 303.
[d] *Op. cit.*, p. 311.

the blood takes place. I am not disposed, therefore, to agree in the propriety of the term, "uterine phlebitis," as expressive of one of the forms of the disease called "puerperal fever;" and on the same principle object to the term "arthritis;" but in adopting the name, "puerperal fever," I do so because it is best understood, for the same reason that "Cholera Asiatica" expresses another plague, although the propriety of the expression might be questioned.

It remains to consider what this disease really is, and in what light it must be considered if we hope to lay down correct principles of treatment. In discussing this part of the question we can only point out the path that appears to lead towards the truth; if we cannot succeed in finding it, something, at least, is gained if we avoid wandering into error. We shall examine puerperal fever as the result of a morbid poison; its symptoms, as manifestations of its action; and think it will be found that in every respect it obeys those laws which the late Dr. Williams has so accurately demonstrated as common to all poisons.

Puerperal fever has a definite and specific action, and selects a tissue for its seat. We know that the action of arsenic is on the stomach, digitalis on the heart, opium and strychnia on the nerves; so also with morbid poisons,—the intestines are the tissues engaged by the typhus poison; the skin and cellular structure, by erysipelas; scarlet fever shows its action on the skin and mucous membrane; and, in obedience to the same law, the puerperal poison selects the serous surfaces and those which are analogous to them. The evidence of its action is found, not only in the peritoneum, but also in the pleura, arachnoid, veins, and synovial membranes. The peritoneum is most frequently engaged, because, after parturition, the most rapid absorption takes place there. This membrane during pregnancy had been gradually distended to its utmost, to keep pace with the enlarging uterus. After delivery, both return to their original dimensions, and consequently the absorbents are in the highest state of activity; the poison is at once taken up, and produces its effects on the peritoneum and uterine veins. What is that action? I am at once met by this question. Is it not inflammation, although of a specific, or, if you please, of a toxemic character? In order to give a correct answer to this query, it is very necessary to define this term, "inflammation." We must agree on what we mean by this expression, and the sense in which it should be understood, before we argue about its special forms; and here a difficulty at once presents itself, not from any want of words to express what it

is, but from the almost impossibility of getting rid of the confusion which has arisen from using the term too extensively and too loosely.

Inflammation is the term applied to every condition of the tissues where redness, swelling, heat, and pain are found in union ; nay, it has been applied to states where these four signs were absent, but in which, after death, certain morbid changes were found similar in appearance to those produced by inflammation. The effects were apparently the same, therefore the cause must be the same ; but inasmuch as there were no symptoms during life to justify the definition, the name "latent inflammation" became a convenient "*locus ignorantiæ.*"

The appearances presented by the lung of the infant at birth and in very early life often accurately resemble those caused by inflammation ; they have even received the names "lobar," "lobular," "vesicular pneumonia." We are indebted to the very simple experiment of Bailey and Legendre for proof that this was not pneumonia at all, but a perfectly opposite condition. They inflated the lungs with air, and immediately the so-called induration, hepatization, &c., &c., disappeared; these supposed evidences of inflammation being caused by a partial collapse of the lung. It appears to me that similar latent inflammations might be disproved if they were capable of an equally easy and decisive experiment; but when these signs of inflammation are present, are they adequate proofs that inflammation is their cause? When, for instance, cancer is destroying the tissues, we find the changes in their structure accompanied by redness, swelling, heat, and pain. If, therefore, this must be called "*cancerous inflammation*," the expression is most illogical, because it is applied to a condition which has not one property in common with pure inflammation. They are perfectly opposed; and to call things totally different by the same name, as being only varieties of the same thing, is contrary to all rules of just reasoning. The tendency of cancer is to destroy; that of inflammation, to preserve organized structure. The one is a disintegrating process, eating away the tissues; the other, a conservative effort to repair or to prevent an injury to them. If we reflect for an instant on what takes place when any of the tissues are broken or injured, we shall arrive at a clearer idea of what inflammation really is. If a wound be inflicted on a limb, blood is effused, a coagulum is formed, and through this medium the wound may be healed without any inflammation, provided all accidental causes which may interfere with the "*first intention*" of nature are removed. If this fail—and it generally does so—inflammation takes place,

lymph called organizable is poured out, pus is secreted, granulations are formed, all having the same object, to protect the injured tissues from causes of irritation. In this process of repair, the irritated capillaries dilate, become gorged with blood, that circulates with difficulty, oscillates, remains stationary, and resolves into its elements, which are exuded—as serum infiltrating the tissues—as fibrin, which is adhesive, and capable of forming new structures ; granulations may be formed, and pus secreted, to protect the exposed surface ; these gradually contract as new tissue is developed, until ultimately the injury is repaired. The whole of these phenomena have a conservative design, and constitute what we mean by inflammation.

In attempting a definition, therefore, I should prefer such terms as express the object of inflammation rather than those applied to external signs, which it has in common with morbid actions of a precisely opposite character. In this sense, inflammation may be considered as *a local determination of blood, followed by exudation of its elements, an accidental result of the effort of nature to repair an injury or to restore a function.* Such a definition will perfectly apply to simple inflammation, and may also include specific inflammations, if we understand by them the effort to limit the action of a poison. Thus the deposition of tubercle may cause specific inflammation of the lung; the poison of syphilis, specific inflammation of the glans penis. In both cases the term 'inflammation' expresses a series of actions altogether different from and opposed to the action of the poison itself. The tendency of a poison is to destroy a tissue or to suspend a function ; that of inflammation is to preserve the one, and to maintain the other.

It is quite possible, however, that a conservative and destructive action may go on simultaneously, and give rise to external characters and morbid appearances well calculated to create confusion ; thus the error is often committed of naming the destructive action by a term expressing exactly the reverse. A man is poisoned by arsenic ; he is said to die of gastritis. Decomposed animal matter mixes with the blood, and acts as a poison ; the case is described as one of phlebitis : although in neither case do the symptoms agree with true inflammation of the stomach or of the veins. The viper-bite is accompanied with redness, swelling, heat, and pain ; nevertheless, the cause is so obvious, death is attributed correctly to the poison : but if the same result happen from a dissection wound, the patient is said to die of diffuse inflammation. Such

is the confusion which arises from including under the same name, 'inflammation,' morbid actions perfectly opposed, merely because they agree in presenting similar appearances. In speaking, therefore, of the action of the puerperal poison, we must discard the term specific 'inflammation' as designating that action. The distinction between this malady and true inflammation of the tissues engaged has been already pointed out; but, although an essential difference exists, nevertheless, an attempt to limit the action of the poison by inflammation may take place, and just as the deposition of tubercle on the peritoneum excites tubercular peritonitis, so the puerperal poison may cause puerperal peritonitis; but that inflammation is only secondary, and its prominence is inversely as the strength of the poison. The more powerful the poison, the less peritonitis; and the weaker its influence, the more distinctly are the evidences of inflammation observed.

The puerperal poison selects the serous membranes as the seat of its action; the action itself is on the blood. The quantity of fibrin is increased; the quality deteriorated. A profuse exudation of *morbid* fibrin takes place, which has none of the properties of healthy organizable lymph. It is not adhesive; it dissolves into a creamy substance, which, when fluid, resembles pus, and has been found abundantly in cases where there was not a single symptom of peritonitis. This poisoned fibrin has been found coating the uterus, the intestines, the spleen, the liver, without adhering to them. Creamy fringes border the mesentery; yellow, dissolved fibrin is met with in the folds of the intestines, looking like abscesses; the fluid mixing with the effused serum gives it a lactescent appearance, the "abundant milky serum" of authors. Exudations are not met with in the veins, because, not being adhesive, they are carried along by the circulation; but dissolved, purulent-looking fibrin is met with abundantly, not only in the open mouths of the sinuses, but throughout the uterus, giving it not unfrequently the appearance of a sponge filled with pus. Sometimes soft coagula close the sinuses; and occasionally, but very rarely, a vein may be closed by a firm plug of fibrin, just as true organizable lymph is sometimes met with in the peritoneum. In both instances they are evidences of a feeble and fruitless effort to limit the action of a poison.

The action of the puerperal seems a contrast to that of the typhus poison on the blood, because, while the former increases, the latter diminishes the quantity of fibrin; yet, if the typhus poison be absorbed by a puerperal patient, the result is

puerperal, not typhus, fever. It is the same with erysipelas, proving that animal poisons, each observing a distinct and definite law of action, may yet reciprocally excite each other.

The action of the poison is modified by the dose as well as by the temperament and constitution of the patient.

Puerperal fever selects its victims. In the same hospital and in the same ward it will not extend from bed to bed, but be found scattered in different directions. When from any cause nervous energy is impaired, the poison is freely absorbed. In hospitals seduced women are always an easy sacrifice; but, even among the affluent, powerful secret causes of mental depression may act with as much force, and expose them to its influence. Such causes are generally unknown to the physician, and he is puzzled and disheartened by the result; nevertheless, their existence is certain, and must always be appreciated.

The most important feature, however, of this law is the manner in which the characters of the disease are modified by the quantity of the poison absorbed. When it is in excess, the patient may die of puerperal fever, without any other symptom than a fluttering pulse, and cold, livid surface. Death takes place so rapidly that there is not time to set up the specific action of the poison. There is an absence of the usual symptoms called inflammatory, and sometimes also no morbid appearances. This is a well-known effect of poisons taken in extreme doses. Arsenic and oxalic acid have caused death without any alteration in the tissues of the stomach. Cholera and typhus have killed before their specific action was set up. Such cases of puerperal fever have been described by Mackintosh under the name of "*latent peritonitis;*" for which he recommended the largest depletion, to relieve, as it were, the incubus of the inflammation which was oppressing the powers of life.

On the other hand, the dose of poison may be so small, and its action so feeble, that true inflammation makes the effort to arrest it, and the case may really be peritonitis, arthritis, or phlebitis.

The contradictions in the opinions and treatment of authors may be explained if attention be given to this law. Those who witness the milder forms of the disease describe and treat it as a local inflammation, while those who witness the plague in its full intensity stand aghast at symptoms which no theory of inflammation could explain.

Dr. John Clark found it to be quite a different disease to any that he had been accustomed to meet. The first cases he quotes occurred in July, 1787: he was astonished to observe

the rapidity with which it ran its course, and the very extraordinary manner in which women were destroyed by it. Mr. Hey, of Leeds, observed the same difference:—"He was alarmed by the extreme rapidity with which the disease ran its course, and by its constant fatality, unlike anything which had ever been known in Leeds"[a]. "He thought it approached the nearest to Dr. John Clark's 'low fever of child-bed;' for although it differed from it in some respects, yet it resembled it in its general characters, and *differed far more widely from simple inflammation of the uterus and peritoneum*"[b].

Such is the experience of these highly practical authorities. Dr. John Clark states that the first cases attacked were the worst. The same fact came under my own notice while resident in the Dublin Lying-in-Hospital. When the plague first appeared, we could not save a patient, but afterwards it seemed to yield more to the treatment employed, as if at first the poison was concentrated, and in its maximum of intensity, which diminished as it became diffused. Puerperal fever also obeys *the law of incubation*; but it is difficult to determine the period accurately.

Two morbid poisons may coexist; this is not a law, but a well-known fact of some importance. Measles may be the companion of hooping-cough. Erysipelas and syphilis are found together, each poison exciting its specific action in the same person at the same time. It need not therefore create confusion, if erysipelas and puerperal fever are met with in the same patient; if we find extensive sloughs in the passages, and morbid fibrin in the peritoneum: but it appears to me, that erysipelas rather precedes and follows puerperal fever than accompanies it.

In the hospital where my experience of this disease had been most accurately formed, erysipelas preceded puerperal fever, disappeared when the latter was in its full power, and returned on its decline. Erysipelas was then prevalent in surgical hospitals, and it is probable that it was taken up by the passages when inflamed after a severe labour, and this poison excited that of puerperal fever.

If it be admitted that puerperal fever strictly obeys the laws of morbid poisons, and is therefore a toxemic disease, it must not be forgotten that one of those laws is,—that the action is *specific and definite;* because other forms of post-partum disease have been enumerated as puerperal fever, although the specific action was absent. Dr. Gooch, in his highly

[a] Hey on Puerperal Fever, p. 2. [b] *Op. cit.*, p. 10.

practical paper on Puerperal Fever, describes cases with quick pulse, tympanic and extremely tender abdomen, with great prostration, but in the post-mortem examinations of those who died, although "the intestines were found enormously distended with air, there was neither redness, adhesion, nor effusion of any kind;" the peritoneum was pale and colourless. Dr. Gooch calls this puerperal fever; I cannot perceive any of its true characters, but if we might assume that erysipelas may attack serous membranes, the difficulty might be removed. The coexistence of puerperal fever and erysipelas has led to the belief that these poisons were identical; each, however, observes its specific action; if, however, a serous membrane might be the seat of erysipelas, the fact would explain the tympanic and painful abdomen, the prostration, its epidemic character, and the absence of any traces of its existence after death, and further, might render intelligible, why patients were killed by depletion, and cured with Dover's powder, a medicine which has never yet succeeded in arresting true puerperal fever. Similar cases are related by Dr. Ferguson, and might be named much more correctly 'puerperoid' than puerperal fever.

The last question in reference to this part of the subject is the class of animal poisons to which puerperal fever should be referred. Whether is it a contagion like hooping-cough or measles, infectious like typhus, or epidemic like cholera? I confess myself a believer in the contagion of puerperal fever. Evidence has now accumulated of instances in which the plague has haunted some unfortunate practitioner from case to case, destroyed all his patients, and ruined his practice. We have also proof that a poison, if not the same, at least perfectly similar in its effects, is contagious. Dr. Routh brought before the profession, some years since, the valuable observations of Dr. Semelweiss on this disease, as observed in the Vienna Hospital[a].

It was there discovered that students coming from the dissecting-rooms communicated the fever to the lying-in women, and that the poison of decomposed animal matter, being brought *into contact* with the passages, produced the disease. The hand was the medium of communication, and the poison absorbed was either the puerperal poison, or called it into action. It is not unreasonable, therefore, to infer that it is a contagion. It is true, there are negative arguments against this opinion, derived from opposite facts. Contact in atten-

[a] Medico-Chirurgical Transactions, vol. xxxii.

dance on patients thus afflicted failed to communicate the disease to others; but negative arguments are always weak, and in this instance especially so, because it by no means follows, that if a poison be a contagion, it must always be communicated. If this were the case, measles, hooping-cough, and such like contagions, would become universal soon after they appeared in a district. We know that obstetric physicians go from lying-in hospitals into private practice without communicating this fever. Practitioners who meet with it in their circle of practice do not of necessity spread the disease, although there are some melancholy instances to the contrary. There are many causes, whether constitutional or accidental, which may promote or resist the absorption of a contagious poison. Plague is the most contagious of all poisons, and yet, even plague has been resisted. De Foe, in his Journal of the Plague, 1665, relates a remarkable instance, which is thus recorded in the quaint language of the time. He calls it—

"THE STORY OF THE PIPER.

"It is said he was a blind piper; but the fellow was not blind, but an ignorant, weak, poor man, and usually walked his rounds about ten a night and went piping along from door to door. The people usually took him in at public houses, where they knew him, and would give him drink and victuals, and sometimes farthings, and he in return would pipe and sing and talk simply, which diverted the people, and thus he lived. It was a very bad time for this diversion, while things were as I have told, yet the poor fellow went about as usual, but was almost starved, and when anybody asked him 'How he did?' he would answer:—'The dead cart had not taken him yet, but they had promised to call for him next week.'

"It happened one night that this poor fellow, whether somebody had given him too much drink or no . . . . was laid all along upon the top of a bulk or stall, and fast asleep at a door in the street, near London Wall, towards Cripplegate, and that, upon the same bulk or stall, the people of some house in the alley of which the house was the corner, hearing a bell which they always rang before the cart came up, laid a body really dead of the plague just by him, thinking, too, that the poor fellow had been a dead body as the other was, and laid there by some neighbours. Accordingly, when John Hayward with his bell and cart came along, finding two dead bodies lie upon the stall, they took them up with the instrument they used, and threw them into the cart, and all this while the piper slept soundly. From thence they passed along and took in

other dead bodies, till, as honest John Hayward told me, they almost buried him alive in the cart, yet all the while he slept soundly. At length the cart came to the place where the bodies were to be thrown into the ground, which, as I do remember, was at Mount-hill (Goswell-street), and the cart usually stopped some time before they were ready to shoot out the melancholy load they had in it.

"As soon as the cart stopped, the poor fellow awaked, and struggled a little to get his head out from among the dead bodies, when, raising himself up in the cart, he called out, 'Where am I?' This frighted the fellow who attended about the work, but after a pause, Hayward, recovering himself, said, 'Lord bless us, there is somebody in the cart not dead.' Another called to him, 'Who are you?' 'I am the poor piper.' 'Where are you?' says Hayward. 'Why, you are in the dead cart, and we are going to bury you.' 'But I aint dead, am I?' They lifted the poor fellow down, and he went about his business."

He did not take the plague, perhaps because he was drunk, and thus the most contagious of all poisons was resisted. Those occasional instances where contact fails to communicate puerperal fever are no proofs that it is not contagious.

The symptoms of this disease have been so accurately described by numerous authors, that it is only necessary to refer to such of them as will explain the principles of treatment. Every author has noticed varieties in the mode of its attack. Vomiting is sometimes the first symptom, or it may begin with diarrhœa; more frequently a rigor, followed by a violent shooting pain through the epigastrium, ushers in the attack, and this is followed by swelling and extreme tenderness of the abdomen. Lastly, there are cases more progressive, in which tenderness is first observed in the neighbourhood of the uterus, extends to the abdomen, is accompanied by a firm wiry pulse (never the case in the former instances), and presents many of the characters of true peritonitis; the bowels are constipated, and vomiting occurs at a later period.

The manner in which the constitution is first affected by this poison is of importance as a guide to treatment. Douleet thus discovered the value of emetics. He observed in his cases, that vomiting was a first and most urgent symptom, and, so far from checking this, he sought means to promote what appeared to him a natural effort to throw off the disease. His ipecacuanha emetics had the most marked success. The same treatment was tried by others, and failed altogether, because the epidemic was of a different character.

Gordon, Hey, Armstrong, and Mackintosh, observed in their cases a rigor followed by the greatest prostration; nevertheless, they boldly employed the largest depletion, and saved their patients. Gooch met with cases of a different kind, in which true peritonitis was a more prominent feature; he found a more moderate bloodletting, together with local depletion, equally serviceable; and lastly describes another subsequent epidemic, in which bleeding killed his patients. This difference can only be explained by assuming a difference in the manner of the attack. Gordon's cases differed from Gooch's in the extent to which the poison was absorbed; while the cases in Gooch's first and second epidemic differ from each other so completely, as to lead to the doubt whether the latter was puerperal fever at all.

This difference in the mode of attack will perhaps also explain the cause of success in the various remedies employed, each of them claiming the most marked success, and each of them quite different in their actions. The moment this poison is absorbed, an effort is made to get rid of it through the ordinary channels: hence the vomiting and purging; the effort generally fails, and poisoned blood accumulates at the centres of the circulation, causing a rigor of greater or less severity. The skin, and I believe also the kidneys are excited to remove the poison from the blood. The practitioner who aids this effort succeeds: thus, Douleet succeeded with ipecacuanha; Denman with tartar emetic; Boer with Kermes' mineral; Armstrong with salts and senna. I have been informed also of the value of nitrate of potash as a diuretic in some forms of this malady; but when the effort failed, and a rigor gave evidence of the accumulation of poisoned blood at the central vessels, Gordon and Hey relieved this at once by taking twenty or thirty ounces of blood, and succeeded in a sufficient number of cases to prove the correctness of their practice and the nature of the disease. Depletion to such a large extent could not be explained on the principle of combating peritonitis; but is intelligible as relieving the liver, spleen, and central organs from the mass of poisoned blood. When so employed, it should immediately follow the rigor, because, if time is lost, nervous power is paralyzed, and the very same treatment only hastens dissolution.

Another class of remedies has also been warmly advocated, and has met with considerable success. Many years ago, Dr. Brenan, of Dublin, used oil of turpentine both internally and externally with great advantage. Dr. Copland approves of this practice, and from his experience of a severe epidemic

in the Queen Charlotte's Hospital, he came to the conclusion that "there is certainly no remedy so efficacious as a decided and judicious use of spirits of turpentine."

Dr. Copland also found camphor in doses of from eight to sixteen grains extremely serviceable. These remedies are altogether different in their character and in their action from the former; they are not only stimulant, but anæsthetic; both are hydrocarbons, and possess the common properties of these bases; they are useful, not merely in stimulating the constitution against the attack, but by diminishing pain they lessen nervous exhaustion. Nothing relieves the extreme tenderness of the abdomen so much as turpentine fomentation; taken internally, it relieves the tormina of flatus. Camphor also assuages the intensity of neuralgic pains. Reasoning upon these facts, it seemed probable that chloric ether might be serviceable, at least in relieving pain: the following case will explain its effect.

In 1855 I was called to see a woman who had been seized the day before with puerperal fever. She was lying on the bed with her knees drawn up; the abdomen distended and extremely painful; the extremities cold; and pulse, 150. I did not think she would live till the next day, and ordered thirty minims of chloric ether with twenty minims of tincture of opium every second hour, merely to give some relief to the intensity of her suffering.

The following day I found that the pain had been completely removed, and she was then comparatively comfortable; but there was no change in the pulse. She, however, rallied so far as to continue in this easy state for nearly a week; but the poison had done its work, the vital powers could not recover themselves, and she sank after this protracted struggle.

Very lately two other cases came under my notice. In the first, the woman had been two days ill. She was propped up in the bed, suffering intense pain, and gasping with painful respirations; the same means gave her immediate relief; but she was too far gone to have any hope of saving her. In the second case, this treatment was carried out so successfully that the woman recovered. I am, therefore, strongly inclined to the opinion, that anæsthetics would be found most useful agents in aid of other remedies. They cannot be depended upon alone, because pain may be relieved, and the disease still makes its progress, but that relief greatly assists any means which may be used to combat this malady.

General rules for the treatment of puerperal fever can scarcely be laid down, so much depends on the character of the

epidemic and the quantity of the poison absorbed. If the dose be a maximum, it is impossible to save the patient; if in such quantity that the constitution can make an effort to get rid of it, much of our success will depend upon a close observation of the manner in which the effort is made : and it is here that promptitude is attended with so much success. Prompt depletion immediately after a rigor has saved many a patient; emetics, purgatives, diaphoretics, and even diuretics, have proved their value when given with promptitude and decision. Depletion has had the most success, because, in the majority of cases, a rigor is a well-marked and early symptom. If the dose be a minimum, just sufficient to excite peritonitis or phlebitis, the treatment must be directed to subdue these inflammations, and the danger consists in the nature of the tissue inflamed. Such cases are met with in hospitals on the decline of the epidemic, or are scattered through a district on the outskirts, as it were, of the poison.

Those authors who have adopted the term "puerperal fever" have made classifications of its varieties. Tonnelle describes the inflammatory, adynamic, ataxic forms; Ferguson, the peritoneal, gastro-enteric, and nervous fevers; Gooch, the inflammatory and typhoid: but these terms only signify degrees in the dose of the poison, not any essential difference in the fever itself; and the remedies to meet these several conditions are successful in proportion as they may remove or neutralize the poison absorbed, or support the constitution against its influence.

The prophylaxis of this malady is a question of even more importance than its treatment. The means of arresting its progress, or expelling it from a locality, may save many lives; the best directed treatment has sometimes scarcely saved one life in ten. In this, as in other toxemic diseases, *ventilation* plays an important part; and much of the mischief caused by this scourge has arisen from our ignorance of the principles of ventilation. The Continental hospitals are remarkable instances of neglect of these principles ; their mortality varies from 1 in 13 to 1 in 20, chiefly in consequence of puerperal fever, the result of imperfect ventilation. Until lately, our own hospitals were liable to a similar objection ; but the General Lying-in Hospital in the York Road, built on the marsh of the Thames, is an evidence of the value of an improved knowledge of this subject. The puerperal fever which so often poisoned its wards is, I believe, now totally expelled.

Another very fertile source for the production of animal poisons is, bad or imperfect drainage, which may baffle the

best directed ventilation. *The sewerage* of the metropolis is now becoming the subject of animated discussions ; and we have learned that there are a multitude of cesspools carrying on their "fæcal fermentations" with an activity which the best ventilation could not remove. It is not surprising, therefore, that puerperal fever should be found scattered through London, even in houses where one could hardly expect it. It is to be hoped that the attention now given to this subject will be the means of destroying such a source of infection. But something more is required than emptying cesspools. It is equally important that the putrescency removed be not brought back again. Some years ago a part of the Edgeware Road was under repair, and a quantity of Thames mud was laid as a foundation for the pavement. In three days afterwards, five cases of cholera occurred in that district; and if there had been any cases of labour, puerperal fever might as easily have been produced, to spread through the neighbourhood. A law is required to regulate the movements of certain manufacturers, builders, and paviors, lest they undo what the public are endeavouring to accomplish. Nay, we would venture to hint that such a law might be of great value if it prevented a more important personage establishing a gigantic cesspool at Erith, where fæcal fermentations may be carried out on a scale of sufficient magnitude to bring back the plague itself. Several methods have been proposed for overcoming this difficulty, but there is one which, in a medical point of view, I think well worthy of attention. Mr. Dovor has discovered a process of deodorization, which I have witnessed, and have been surprised at the result. By this method the refuse of the most offensive sink has been rendered perfectly devoid of smell or taste; the stinking sewerage has been converted into water nearly pure, and a residuum perfectly inodorous, but still valuable as manure. The agents employed by Mr. Dovor are hydrochloric acid, proto-sulphate of iron, and chloride of sodium : proto-sulphate of iron, because it is the best salt for fixing ammonia; and chloride of sodium, because of its chlorine. With the same object, Sir William Burnett and Mr. Morell have used concentrated solutions of chloride of zinc as disinfecting agents.

Chlorine is well worthy of attention as a prophylactic; its powers as a disinfectant had been known long before this experimental proof of its efficacy. When Dr. Collins was appointed Master of the Dublin Lying-in Hospital, puerperal fever was rife; he expelled it completely by the extreme strictness with which cleanliness and *chlorine fumigations* were carried out. Each lying-in ward, the moment it was empty,

underwent a process of fumigation and cleansing, which continued for a fortnight, when it was opened again for patients. The result was, that of 10,785 patients delivered in the hospital, only 58 died, which is nearly in the proportion of 1 in 186 : the lowest mortality, perhaps, on record in an equal number of a similar class of females[a].

Dr. Semelweiss has proved its value in the Vienna hospital, where from 250 to 300 women are delivered monthly. The wards are arranged in two divisions. In the first, about thirty medical students and eight midwives attend; in the second division there are twenty-eight midwives, and no students. The mortality in the first division varied from 30 to 70 per month ; while that in the second (the midwives' department) was only from 7 to 9 per month. In one year, the mortality in the first division varied from 30 to 70 per month; while in the midwives' department it was only from 4 to 7 per month. In one year the mortality in the first division amounted to 500 ! while, in the worst period, it did not exceed 40 in the second division. Dr. Semelweiss was at a loss to explain this extraordinary difference; he could not admit superiority of skill in the comparatively ignorant midwives: the only difference he could think of between them was, the dead-room. The students were always making post-mortem examinations ; the midwives never entered it. He assumed from these facts that the cadaveric contagion was communicated to the lying-in women, and excited puerperal fever. With this conviction, he employed *chlorine* as a disinfectant. Students in attendance on patients were required not to handle dead animal matter. Those who had done so were not allowed to examine patients until the following day, and, before doing so, were obliged to wash their hands, *and especially their nails*, in a solution of chlorine. Dr. Semelweiss was gratified to find that by this means he arrested the disease ; the mortality fell at once to 7 per month, the same as in the midwives' division[b].

These facts prove that chlorine is not only a deodorizer, but a disinfectant, and suggest some important questions. Is smell a proof of the vitality of a poison ? If the smell be removed, is the poison destroyed ? Every dissecting-room student knows the tenacity of the cadaveric effluvia. Washing will not remove the smell of his occupation from his hands ; he uses every precaution lest his habiliments should betray him ; the ammoniacal odour, if he is not cautious, may accompany him in

[a] Collins' Reports, p. 390.

[b] Dr. Routh's paper, Medico-Chirurgical Transactions, vol. xxx. p. 36.

his amusements as well as his studies; he, therefore, employs every means in his power to avert such a catastrophe: hence the value of chlorine, which Dr. Semelweiss has proved destroys equally the odour and the poison.

Mr. Dovor finds chlorine valuable as a deodorizing agent; and, as it is also used as a disinfectant, we may assume that if putrid effluvia be destroyed, the poison to which it belongs became inert. If this view be correct, it has a very important relation to puerperal fever, because it is always accompanied by a peculiar odour. The effluvia of the lying-in ward is well known to those who attend lying-in hospitals; but the odour of puerperal fever is different: it is faintly acid, very difficult to describe, but easily recognised by those who are accustomed to the disease. I believe that it is equally tenacious as the cadaveric odour, and will accompany the practitioner unless he is strictly on his guard against it. Chlorine will destroy this effluvia; does it destroy the poison producing it? If so, may it not be used internally, as well as externally? Hydrochloric acid, chlorate of potash, chloride of sodium, as a purgative, are at least worth a trial. I offer these suggestions with diffidence, because I have not yet had an opportunity of testing them by experiment.

Anæsthetics are agents which seem to have a prophylactic power. The drunken piper who escaped the plague will illustrate my meaning. Drunkards are less under the influence of poisons, because the susceptibilities of the nervous system being blunted, as it were, by their potations, the activity of the absorbents is proportionately diminished. On this principle, chloroform, so far from being a cause of puerperal fever, seems to me a preventive; and if this scourge were raging in a district, or decimating an hospital, I should certainly take advantage of its power, as a security against the attack.

In the review which has been made of this perplexed subject, the object has been to remove from it what seemed unnecessary difficulties, caused by the terms employed to designate this disease. The correctness of naming it an inflammation of one or other of the tissues engaged was questioned, because such inflammations were only accidents, which may or may not be present, and do not constitute the essential character of the malady. Hence, the correct principle of treatment is, the employment of such means as will remove or destroy a poison, not such as are intended to combat an inflammation.

Lastly. At the present time, when so much attention is given to sanitary measures,—when the old bills of mortality have been succeeded by a most valuable system of registra-

tion,—it seems to be a very grave error to call a morbid poison by a wrong name ; and if in their returns the profession send in cases of puerperal fever under the names of "peritonitis," "phlebitis," "arthritis," they not only deceive themselves, but the public. Those precautions which are necessary when poisons are present are neglected, because it is believed to be, and is called, a simple inflammation ; and it is only when the so-called inflammations are flying from house to house or from bed to bed, that alarm is taken,—just when it is too late. The Registrar-General receives a return unintentionally false, and puerperal fever may be raging in a district where the name is never heard : but the period is remarkable, because of the number of post-partum inflammations which have had a fatal termination.

Art. II.—*Observations on Subacute Inflammation of the Prostate Gland, its Diagnosis and Treatment.* By T. Hawkesworth Ledwich, M. R. I. A., F. R. C. S. I., Lecturer on Anatomy and Surgery in the Original School of Medicine, Dublin.

The critical analysis of the various surgical essays and class-books renders the fact sufficiently manifest, that observation has left but little to be added to the stock of our present knowledge on the more frequent morbid states of the prostate gland. The descriptions of acute inflammation and its sequelæ, as to symptoms and pathology, are sufficiently minute to be available in practice ; whilst the chronic enlargement of senility, having formed the subject of accurate investigation and close inquiry as to its advent, progress, and treatment, ceases in a great measure to afford a field for the exercise of the labours of the surgical pathologist, except in some rare and complicated cases that still, lying beyond the limits of routine description, demand further examination. But these examples are so few, and their occurrence so exceptional, that they attain a diminished amount of pathological importance commensurate with their general insignificance. Still, whilst fully recognising this descriptive completeness in connexion with acute inflammation and chronic hypertrophy, there are yet morbid changes equally manifest, inducing symptoms as evident as those indicating the former maladies, which seem to have eluded the attention of surgical writers, perhaps not wholly, but certainly to a great extent ; and when subacute inflammation of the prostate gland has been noticed, the remarks have been cursory and incomplete, although the disease is associated with symp-

toms which exercise a more injurious influence, both physically and morally, on the patient than possibly any other affection to which the gland is liable. Subacute inflammation of the prostate occurs at an early period of life, and occupies an intervening position between actual or acute disease and chronic hypertrophy; partaking of the character of the former in the occasional severity of the symptoms that indicate irritation, and approximating the latter in its tendency to assume a persistent form unless submitted to a course of judicious and persevering treatment. But it must not be inferred that any causative connexion subsists between these maladies, as the acute never seems to merge into the subacute, nor the latter into senile hypertrophy. In fact, this affection appears to be an independent form of inflammation, peculiar in its causes, symptoms, and results; never suppurates or excites surface ulceration, nor does it involve as an invariable contingency any permanent organic change in the prostatic structure which is not amenable to proper treatment enforced at an early stage of the disease. It is, therefore, evident that its just diagnosis attains a character of much importance in relation to its correct treatment; and it is frequently a work of the greatest difficulty to penetrate the obscurity which often involves those cases, deepened by the indisposition of the patient to throw the light of an accurate history and candid narrative of his symptoms on the difficult path of investigation which leads to the diagnosis of subacute maladies of the urinary organs. This aversion to frank communication seems to arise in a great measure from the fact of the patient having taken an incorrect view as to the nature of the affection under which he labours, and yields rather to morbid views in that respect than to the legitimate desire to unfold the depressing symptoms that render even pleasure disagreeable. However, a close investigation of the case by its physical signs and vital symptoms, with other manifestations of urinary disturbance, will lead to the *detection* of the seat of the disease; whilst a further system of negative reasoning becomes requisite in order to arrive at its correct diagnosis.

In order that a just conception may be formed of the symptoms appertaining to this affection, a few reflections on the general relations of the organ involved will constitute a legitimate introduction to its more immediate pathology. Just at the period of puberty the prostate undergoes a remarkable increase of size, and its structure appears more spongy, vascular, and soft. The prostato-vesical plexus and structural vessels of the gland are largely increased in diameter, representing

a huge mass of erectile vascular tissue, subject obviously to be the seat of temporary congestions, as these vessels are amenable to the same influences which govern the production of sexual excitement—an instinct attaining its acme of development at this period. Further, the prostate is placed at the point of communication between a reservoir and its efferent canal; and the conditions of the latter in their various states of distention must exercise a corresponding impression on the gland. Again, its capsular investment, by a dense and unyielding tissue, renders an increase of volume liable to alter the canal which permeates its structure; whilst pathological changes in the character of the fluid it transmits tend materially to originate disease or modify its symptoms when in existence from other causes. Finally, its contiguity to the rectum, bladder, and seminal organs sufficiently accounts for the reciprocal relations that subsist between them in their several affections, and render a more minute examination of the subject a mere pathological superfluity.

The symptoms attending subacute inflammation of the prostate are liable to some variety both as to number as well as intensity, being greatly influenced by the period of the disease, the moral aspect of the patient, and the previous condition of the general health. There is a more frequent desire to pass water, sometimes continuing with great intensity for a few days, and then becoming mitigated without any apparent cause. The patient complains severely of an inability to retain his urine for any length of time; uneasiness in the perineum, amounting to burning or scalding, with occasional sharp attacks of strangury, and a desire to go to stool, accompanied by great straining in passing the last drops of urine. The urine is usually acid, depositing crystals of uric acid and shreds of mucus; but it may be intensely alkaline, becoming rapidly ammoniacal, and throwing down mucus and the phosphates in quantity. There is likewise dyspepsia, with great nervous irritation, coughing, and straining at stool, or priapism, causing a discharge of mucus, perfectly clear and transparent, from the orifice of the urethra, which, being examined microscopically, yields the following composition:—1. Morphous crystals of uric acid, or ammoniaco-magnesian phosphates. 2. Mucus corpuscles. 3. Blood discs. 4. Epithelium. On introducing the finger into the rectum there is tenderness; and although a full-sized catheter (No. 10) will pass with facility through the urethra, it causes the patient the most intolerable agony, often lasting for hours after the operation. The penis is sometimes painful at the glans, and the organ is hard and shrunken, as

if the crura participated in the general urethral irritation. In the morning the symptoms are almost absent, but increase gradually from midday, the patient being frequently roused from sleep by scalding pain in the urethra, and irritation of the rectum, which keeps up a continual desire to strain ; or again, there may be a discharge from the urethra simulating the escape of normal secretion, but which augments rather than diminishes the prevailing irritation. After some time the symptoms become aggravated, and the patient's health suffers in proportion. He is indolent, incapable of any active exertion, either mental or bodily ; his appetite fails, memory lapses, the secretions become vitiated or checked ; there is headach, pain in the back on the slightest exertion, and depression of spirits, more or less marked.

The patients most prone to this affection are those who lead a sedentary life, indulge in late rising and other forms of dissipation ; who take but little exercise, and that, when taken, accomplished rather to induce fatigue than to create relaxation ; and when once the disease is established, the constant lapse of the patient's mind towards its seat tends not only to perpetuate the malady, aggravating the prostatic symptoms, but also complicating it with others equally intractable as to their nature and treatment. As in all subacute diseases, one set of symptoms may predominate over others: thus in one, the inability to retain the urine forms the principal source of complaint ; in a second, the daily recurrence of perineal irritation ; in a third, the urethral discharge ; whilst in the most inveterate cases the mental influence creates a degree of depression more permanent than even the existence of a fatal disease. But fortunately this latter condition arises from the mistaken idea of the patient that he is the subject of a seminal affection about to eventuate in impotency ; and to such an extent has this impression become rooted in the patient's mind that it has at last induced mania, rendering a safe retreat essential in order that moral as well as medical treatment might be put in force to remove the delusion and arrest its influence. To whatever cause the fact may be attributed, scrofulous patients, with fair skins and light complexion, of the nervous temperament, are most subject to this disease ; and I have met with it in two cases combined with chronic phthisis, which it much aggravated during its progress, and rendered intolerable towards the close of life.

An opportunity has occurred to me, on two occasions, whereby I became acquainted with the pathology of this

affection, and satisfied myself as to its true nature and locality. One case occurred at the age of 18, the second at 30; both were well-marked examples of the disease, and succumbed to phthisis, but this latter had no connexion with the urethral affection. The prostato-vesical plexus was full, and many of its branches varicose; the capsule of the prostate adhered intimately to its surface, and, on slicing the gland, it seemed soft, with large, open, venous branches on the section, from which blood exuded, whilst the whole gland exhibited an augmented volume; the mucous membrane of its urethral aspect was *red*, *soft*, thickened, and *villous*, whilst the ducts could be distinguished with the unassisted eye; the uvula and trigone vesicæ were red and turbid, but the remainder of the bladder was healthy. I examined with some anxiety for the presence of tubercular deposit in the gland, but, although this morbid condition was often anticipated, no evidence of any such structural lesion could be detected. The seminal ducts did not present any alteration as to size, their excretory orifices being discovered with the greatest difficulty, the vesiculæ seminales being full and swollen, but without any other abnormal appearance; scrofulous tubercles existed in the epididymis, yet the testicles, although soft and small, were otherwise healthy.

From the foregoing details it will be admitted, that sufficient evidence appears to justify the assertion that a subacute inflammation of the prostate gland really does exist, which, although without the active characters that mark the consecutive affection of gonorrhœa, is still sufficiently manifest to acquire a special pathological importance in urinary disease; nor can its obscurity as to its causation be received as any rational evidence of its innocuous tendency; for, on reflection, it becomes manifest that those diseases which generally elude immediate research are the most difficult to understand and obstinate to remove, and this difficulty is further enhanced in these special diseases by the similarity of the symptoms attending urinary affections, and the diversity of the pathological conditions of which those symptoms may be the visible manifestation. It is, therefore, rather by a system of negative reasoning, than by the presence of positive signs or special characters, that the basis of differential diagnosis of urinary affections must be founded, in order to represent any practical value in isolating disease and determining its causes, nature, and treatment.

I now propose to illustrate the history and treatment of

this malady, by introducing the details of a sufficient number of cases requisite to exhibit its various peculiarities as to symptoms, diagnosis, and treatment.

A gentleman was sent to me by a physician, in consequence of some symptoms he laboured under resembling stricture, of which the most disagreeable seemed to be a frequent desire to pass water, its escape in a forked stream, followed by the escape of a few drops of clear mucus, particularly after any severe walking exercise. He is thirty-one years old; large, full, florid, and well developed, with light hair and fine skin; he states that he has suffered uninterruptedly for at least eight months; urine, acid, sp. g. 1·18; No. 8 catheter passes without difficulty, but causes much pain in the recto-bulbar space, and, on examination by the rectum, pain and tenderness are produced during light pressure on the prostate. There is no physical sign of stone, nor is there pain on deep pressure above the pubis; symptoms of gouty disposition are also absent; the mucous discharge is free from spermatozoa. In this case my attention was first drawn to the probability that it partook of the specific nature of gout; but the absence of hereditary tendency and other concurrent symptoms of that affection negatived this supposition; absence of spermatic elements removed the possibility of spermatorrhœa; the period of life was opposed to the symptoms being the early manifestations of chronic enlargement of the gland, which they particularly resembled; whilst the absence of the physical signs of stone, stricture, or the vital evidences of nervous lesion, combined with the positive manifestations of prostatic disease, formed sufficient grounds for determining this to be an example of subacute inflammation of the gland. He could not assign any exact cause for the affection, not having been at any time particularly prone to dissipation, but dates its appearance from being several days consecutively on horseback, in cold, wet weather, when he was constrained, by the pressure of duty, to ride rapidly: at the present time, riding always aggravates the symptoms on the succeeding night, during which he sometimes has to pass water from seven to eight times, rendering his sleep most uncomfortable. I recommended the application of leeches to the perineum; suppository of soap and opium by the rectum; warm bath each night; and the administration of alkalies with hyoscyamus; vegetable diet; and to lie with the pelvis raised on a pillow during the night. Having persevered in the foregoing plan of treatment for three weeks, the symptoms wholly disappeared; and following it up with cold bathing, tonics, frictions to the buttocks, groins, and perineum, no further re-

currence of the disease took place, and now, after a lapse of seven months, he remains perfectly free from any annoyance.

Mr. M., aged 30, a railway official, of sedentary habits and sanguine temperament, complains of fulness in the perineum and rectum; sudden scalding, inducing a desire to pass water; mucous discharge from the urethra during stool, and frequently at night when he coughs or sneezes, but sometimes without any exertion. He has suffered now for three years, and has been treated for spermatorrhœa by iron constitutionally, with caustic applications locally, which seem to have aggravated rather than mitigated the symptoms of irritation, as, after each operation, the pain and burning returned with greater energy than before. He attributes the disease to excessive dissipation, which, however, he has relinquished for the last two years. On examination by the rectum, the prostate feels hard, and its outline can be distinctly traced, particularly tender in its left lobe, not so painful in the right; when pressure is carried from behind towards the penis, an opaque drop of mucus exudes, of which mucous corpuscles, epithelium, and phosphates were the only solid elements; *there were no traces of spermatozoa.* He has had occasional seminal emissions, and on this subject he seems to be quite hypochondriacal, fearing the results of that malady, to which his attention is especially directed in consequence of the treatment that he was subjected to on a former occasion: observes that attacks of headach always supervene after exercise, and that he is easily fatigued, sweating profusely; wishes to have caustic again applied, notwithstanding his former experience of its injurious nature. In this case the symptoms were obviously prostatic; but there was some difficulty in the differential diagnosis as to whether the irritation resulted from the entrance of foreign material into the urethra at an abnormal period, or that the affection was primarily prostatic, totally independent of the seminal organs. This course of necessary discrimination seems to be especially avoided by those who essay to perceive in every case of chronic urethral discharge circumstances sufficiently suspicious to justify the indiscriminate use of caustic, a proceeding unfortunately tending not less to the probable injury of the patient than opposed to the true interests of scientific research. It is never a subject of much difficulty to accommodate the history related by a weak-minded person, so as to correspond with preconceived ideas of a certain disease: the duty of the surgeon is, therefore, obviously, to denounce this unprofessional pandering to the morbid prejudices of an ignorant patient; but at the same time it would be equally erro-

neous to discountenance the use of caustic when necessity demands the operation, or circumstances indicate its utility; but experience has proved that the cases in which its application may conduce to the patient's advantage are the exceptions, not the rule; and its injurious effects in the majority of patients, where its employment is only sanctioned by empirical reasoning, become so manifest that something more than a silent negation of its inconsiderate employment is required from our profession. It certainly fixes the patient's mind on these particular organs, creating a nervous terror of impending consequences, and inducing irritation of no ordinary severity when applied to an organ already within the confines of actual inflammation. Further, I am confident that it often produces the very disease it is proposed to relieve. Let each case be closely analyzed, without preconception or prejudice, prior to the employment of caustic, and a useful and powerful remedy, in some cases, will take its legitimate place as a therapeutic agent. The presence of the elements of mucus only, combined with the positive symptoms, was sufficient to discriminate the true nature of the case; but without the assistance of the microscope, and its revelations, I might have perpetuated the erroneous convictions of the patient's previous advisers. Blistering the perineum, suppositories, with the administration of cubebs, failed to alleviate the symptoms, as the discharge continued with unmitigated perseverance, notwithstanding the fact that, under the use of cubebs, there is often a rapid decline of the disease. The powder should be given in drachm doses every fourth hour, with large imbibition of diluents, and the recumbent posture enjoined. The balsams, with Pareira brava, were equally inefficacious; but, by the continued use of the sulphate of zinc internally, gradually increasing the dose until twelve grains constituted the daily amount, avoiding constipation, and injecting a solution of diacetate of lead and opium into the prostatic portion of the urethra, the affection gradually subsided, whilst cold baths, tonics, and sea-air, completed the convalescence. In order that injections may reach the distal portions of the canal, special instruments must be used. I have had a catheter, No. 6, made for the purpose, perforated near the point at about one dozen different places; to this an ordinary syringe is adapted, and, having placed the patient in a recumbent posture, the instrument is passed down to the prostatic portion of the canal, and into it I then gently force two drachms of any special solution previously selected, allowing it to remain at least twenty minutes. It never passes into the bladder, or creates any disagreeable effects; but it is

only when other means have failed that the introduction of an instrument is justifiable, although I have found such decided advantage to accrue from the cautious but persevering exhibition of injections, that I look upon them as one of the most powerful remedies to combat this particular disease. Still, even here the practice must be influenced by the nature of the symptoms, and the effects of its first application particularly noted before having recourse to its repetition. If the passage of the instrument creates pain, induces spasm, draws blood, or if the injection is rapidly returned, with subsequent dysuria, and the passage of bloody mucus follows, these circumstances will contra-indicate its further use, and demonstrate its injurious tendency, rather than any possibility of deriving beneficial changes from its continuance.

I have tried various forms of injection, such as gallic acid solution with hyoscyamus, the decoction of tormentilla with belladonna, in cases associated with severe strangury, but after sufficient experience of these, I find the diacetate of lead with opium in solution as being much better tolerated, and also more specific in its influence on the mucous membrane of the canal; and, after its employment in a number of cases, it may safely be asserted that it never has been productive of those injurious results conceived to arise from the immediate application of sedatives to the prostatic portion of the urethra, which may have had their origin in the use of unsuitable instruments, the exercise of undue force, and improper forms of injection. But with caution, gentleness, and address in the performance of the operation, safety is attained, and benefit accomplished. In the history of a typical case, it has been remarked that the constitutional sometimes exceed the local symptoms in severity, especially in patients of a nervous temperament, with weakened mental powers, who are always prone to exaggerate their suffering, and recoil from the contemplation of the highly-wrought picture they have executed. Such patients are usually the victims of hypochondriasis, and have been subjected to treatment for a long period. An example of this description has recently come under my observation, in the person of a student, aged 23, the subject of long-continued disease of the prostate. He was much emaciated, unable to fix his attention on any subject, with pains in the spine, combined with frontal headach; has seminal emissions (supposed) every night, and occasionally during the day; was cauterized four times at his own urgent request, and has tried numerous remedies, under medical and non-medical advice, without avail. He is almost fatuous and sleepless, being disposed to cry even if spoken to

in a loud voice; has tenesmus, frequent desire to pass water, with burning pain in the perineum, and prostatic tenderness. I requested him to bring me a portion of the discharge, and that, if it contained spermatozoa, I would yield to his request, and apply the caustic,—a proceeding rendered questionable by the fact that the gentle introduction of a No. 8 catheter produced the most intense pain and bloody urine. On the next day a portion of the ejected fluid was placed on the field of a "Ross," with an eighth object-glass, and it was found to consist of mucous corpuscles, squamous epithelium, blood-discs, and prisms of ammoniaco-magnesian phosphate, without a single spermatic element to justify the diagnosis which was previously formed.

There was some difficulty in treating this case, in consequence of the mental disorganization. The nervous irritability was allayed, and sleep induced by opiate enemata; blisters to the perineum repeated weekly; raising the pelvis during sleep, to favour the return of the venous blood; cold bath; gradual exercise; sea air; with the internal administration of the sulphate of zinc with extract of rhubarb, constituted the course of treatment pursued for four months, when it was finally successful. It was curious to remark the sequence observed in the disappearance of the symptoms. After a month the mental depression no longer existed, and he became cheerful and buoyant, although the local disease was without alteration, as the mucous discharge continued almost to the last; but yet he expressed himself cured long before it entirely ceased to escape from the urethra.

Alterations in the form of the external genitals are in all treatises associated with disease of the seminal organs, in order to suit the special tendency of the inquirer; but that they are by no means allied in the relation of cause and effect will appear from the following case:—

Mr. L., a divinity student, aged 26, stated that he was in the habit of bathing during the winter, and thus brought on the disease under which he labours. *Has been treated by a quack, who impressed on his mind the certain results of the severe malady he has acquired ;* this creates morbid states of ideation, whilst physically he is pale, emaciated, and feeble, with the following symptoms:—Alkaline urine, frequent desire to pass water, sweating, slight urethral discharge, and prostatic tenderness. The penis is small, hard, and contracted; the glans cold and blue; scrotum relaxed; testicles soft, but not atrophied. This alteration in the penis is of comparatively recent date, and is coincident with the conviction that he had become

impotent; not that he had any evidence of the fact, but because he had read of such results being constant in these cases, attended with the sense of debility he complained of. Having divulged the nature of his case to his brother, a medical man, he placed him under my care, and having first removed the delusion as to seminal disease, and insisted on the removal of a special apparatus to compress the urethra during sleep, the administration of acid tonics, blisters to the perineum, sedative injections by the urethra, with well-regulated diet, restored this patient and his genitals to their normal condition, and no relapse has occurred.

There still remains to be noticed an exceptional symptom which admits of practical illustration, and although it comes under the class of hemorrhages, it assumes the mitigated form of passive exudation, that so often accompanies subacute inflammations of mucous membranes, in which we fail to discover any ulceration or breach of continuity, although such, it is obvious, must be in existence to permit the escape of the blood-discs.

A gentleman, aged 46, married, and subsequently contracted gonorrhœa, which yielded after some time to the usual treatment. He then, for two months, felt perfectly well, but gradually became affected with more frequent desire, strangury, tenesmus, mucous discharge, and prostatic tenderness. The discharge is always tinged with blood, so as to discolour the clothes. It consists of mucus, epithelium, and blood-discs, the latter being numerous and granular. Ordered, ten leeches to be applied to the perineum, with gallic acid and extract of hyoscyamus internally. This treatment was not productive of any benefit. Anodyne enemata relieved the symptoms for a few days, but they again returned. After a long walk he had a strong desire to void urine, and he then observed that, by straining, only drops of blood were expelled. This continued during the night, and on the next day, when I saw him, he had lost about four ounces of blood. I recommended the recumbent posture, with small doses of gallic acid, sufficient to control, but not wholly to arrest the bleeding. It progressed until the third day, when it gradually ceased, and with its cessation all the other symptoms of irritation permanently subsided, so that nature accomplished the salutary change that art was unable to achieve.

I have endeavoured to avoid the unnecessary introduction of cases to a number greater than was absolutely requisite to illustrate practically this well-marked affection, and draw at-

tention to its special features and treatment; and although it may appear as an attempt to introduce a distinct element into the already crowded literature of urinary pathology, still, in this age, when it is the habit of some even of our own profession to treat of those diseases only which pander to public credulity, it is conferring an advantage on the social position of our profession, if a common source for the emanation of prurient imaginings be placed beyond the limits of empiricism, and replaced within the circle of scientific medicine; and, although the name of Lallemand must always attain its just amount of respect, still it is the duty of every scientific inquirer to condemn those fallacies induced by his writings, and sanctioned, apparently, by his authority, which have tended to increase empiricism, and detract from the character of medicine as a science.

From these details the following conclusions may be deduced:—

1. That a form of subacute inflammation of the prostate gland really does exist.
2. That it differs in its causes, progress, and termination from any previously recognised disease of the gland.
3. That all circumstances tending to produce blood determination to the pelvic organs become exciting causes of the disease.
4. That it occurs at or about the age of puberty in the majority of cases.
5. That the scrofulous diathesis predisposes to its development.
6. That it is a progressive affection, but does not proceed to disorganization.
7. That it is frequently and ignorantly confounded with spermatorrhœa, they being sometimes, but rarely, associated as independent diseases.
8. That whilst caustic aggravates the disease, it yields to tonics, sedative injections, and counter-irritation.

In concluding these observations, I must apologise for the absence of quotation from recognised authority, but it is not from any indisposition to avail myself of the labours of Hunter, Home, Coulson, and Adams, that I am deterred from introducing their remarks; but solely from the feeling that the nearer a fugitive paper approaches the character of a study from nature in its morbid aspects, the more valuable it becomes as a practical record.

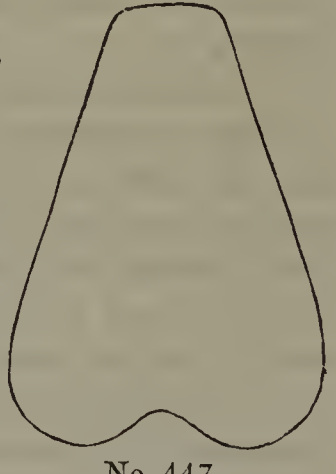
Art. III.—*Observations on the Human Crania contained in the Museum of the Army Medical Department, Fort Pitt, Chatham.* By George Williamson, M.D., Staff Surgeon, Second Class.

(*Continued from* vol. xxiii. p. 373.)

OVAL SKULLS.

DIVISION 13.—NEW ZEALANDERS.

There are four skulls of New Zealanders in the Collection. The skulls are of large size, oval, and well formed, with oval faces, and resemble European skulls in almost every particular; the forehead is broad, arched, but rather low and receding; the vertex is well arched, of moderate breadth, and not flat; the occiput is not prominent, but well rounded off; the ridge for the attachment of the temporal muscle is extensive and well marked; the superciliary ridges are prominent, and there is a depression across the root of the nasal bones, but this is not so great as in the Australian, nor is it greater than in the generality of the European skulls; there is a deep depression across the malar bone immediately below the prominent external angular process of the frontal bone; the nasal bones are very highly arched, and the breadth between the eyes is not great; the malar bones have the same direction as in European skulls; the alveolar processes are straight, and do not project; the anterior nasal aperture is of this form, which is that of the European skull. No. 449 is a large heavy skull with the bones of the face large, and the ridge for the attachment of the temporal muscle is extensive, and very strongly marked, as likewise those on the occiput; the malar bone and zygoma are strong; the lower jaw is strong, but presents no difference; the surfaces of the teeth are much worn down. These are the only points in which it differs from European skulls: the other three skulls resemble European in every particular. Wormian bones were found in the occipital suture in two instances, and in one instance in the temporal and sphenoid suture.



No. 447.

The two tattooed heads are beautiful specimens of this race.

No. 447. Skull of a New Zealander. Cranium oval and well formed, and resembles the European in every particular:

the forehead is rather low, but well arched; superciliary ridge prominent: the ridge for the attachment of the temporal muscle is extensive and well marked; nasal bones very highly arched, and remarkably prominent; alveolar processes straight, and do not project; the teeth are sound and regular.—*Donor, Dr. M'Leod, D. I. G.*

No. 448. Skull of a New Zealander.—Cranium large, oval, and well formed; forehead rather low, but arched; superciliary ridge well marked; nasal bones prominent and highly arched; alveolar processes straight, and do not project; the teeth are sound and regular. This skull has all the European characters strongly marked.—*Same Donor.*

No. 449. Skull of a New Zealander.—Cranium large and oval; forehead broad, but very low and retreating; vertex broad; ridge for the attachment of the temporal muscle is extensive and well marked, and also the ridges on the occiput; the superciliary ridge is very prominent; the bones of the face are large, and the malar bone and zygoma are very strong; the nasal bones form a sharp arch, but are not prominent; the alveolar processes are straight and do not project; the teeth are strong and regular, and their surfaces worn down, more particularly the bony part or centre of the teeth; the incisors are round and sharp; the sweep of the lower jaw is great, and its condyle large and expanded, as likewise the corresponding articular surface in the temporal bone; the base of the skull is deficient; the cranium is heavy, and the bones are thick. The skull has all the characteristics of a large European skull.—*Donor, Mr. Imlay, A. S. Staff.*

No. 451. Tattooed head of a New Zealander.—Head large; forehead broad, but retreating; hair black, thick, and in long flowing curls; nose very prominent; lips thin; the hair is long on the upper lip and point of the chin.—*Donor, Dr. Gibson, A. S. Staff.*

Class III.—skulls with the superciliary ridge most remarkably prominent and overshadowing the face.

division 1.—sandwich islanders.

There are five skulls from the Sandwich Islands, three of which, viz., Nos. 453, 454, 455, resemble each other, the chief characters being the very remarkable prominence of the superciliary ridges, which project entirely in front of the face, especially in No. 454, and the deep depression across the root of the nasal bones, and also across the malar bone immediately below the prominent external angular process of the frontal

bone. The cranium is small and narrow; the forehead low and receding; the vertex arched, but not broad; the occiput well rounded; the ridge for the attachment of the temporal muscle is not extensive nor well marked in Nos. 454 and 455; it is, however, extensive in No. 453; the bones of the face are small and very short, and stand backwards behind the prominent eyebrows; there is nothing remarkable in the position of the cheek-bones or zygoma; the nasal bones are small, and slightly arched at their lower part; the anterior nasal aperture is of this form in No. 455; the alveolar processes are very short and rather broad in front in Nos. 453 and 454. In No. 455 the alveolar processes project somewhat; the orbits are small and contracted; the surfaces of the teeth that remain are worn down; the base of the skulls presents no difference. The skulls are heavy, and the bones thick. No. 456 resembles the Malay skulls in the broad flat face, the cheek-bones, alveolar processes, nasal and frontal bones being all nearly on the same plane. These peculiarities will be observed on referring to the description of the skull. No. 457 resembles the Negro skulls in the small, narrow, but straight and well-arched forehead, the nasal bones on the same plane, the form of the anterior nasal aperture, and the slightly projecting alveolar processes; Wormian bones were found, in three instances out of the five, in the occipital suture; the sphenoid was entirely cut off from the parietal bone in one.

No. 455.

No. 453.—Cranium oval; forehead broad, but low and retreating; parietal protuberances prominent; vertex broad; ridge for the attachment of the temporal muscle extensive; superciliary ridge very prominent, and a deep depression across the root of the nasal bones; the breadth between the eyes is not great; the nasal bones are small and little arched; the face is very short, but broad and flat; the malar bones stand forward and outwards; the alveolar processes are very short, straight, and do not project; the surfaces of the few teeth that remain are smooth and worn down.—*Donor, Dr. Ray, Deputy Inspector, Royal Navy.*

No. 454.—Cranium oval and narrow; forehead low and retreating; ridge for the attachment of the temporal muscle extensive and well marked; superciliary ridge most remarkably prominent, and projecting completely in front of the face; the breadth between the eyes is not great, and the nasal bones seem to have been somewhat arched at their lower part; the

face is flat, and the bones are of moderate size, or rather small compared to the skull; the malar bones are small, and stand backwards, and are flat on the head; there is a deep depression on the malar bone immediately below the very prominent external orbital angle of the frontal bone; the alveolar processes are short and straight, and do not project; the few teeth that remain are small, and their surfaces worn down; the bones of the skull are thick.—*Same Donor.*

No. 455.—Cranium small and oval; forehead very low and retreating; ridges for the attachment of the temporal and other muscles of small extent, and not strongly marked; the sphenoid is entirely cut off from the parietal by a process of the temporal bone; superciliary ridge prominent; breadth between the eyes is not great, and there is a deep depressed groove across the root of the nose; the nasal bones are small and slightly arched; the malar bones do not stand forward nor backwards, and there is a deep depression on the malar bones immediately below the prominent external angular process of the frontal bone; the anterior nasal aperture is somewhat of the European form; the alveolar processes project to a considerable extent, and the surfaces of some of the teeth are worn down.—*Same Donor.*

No. 456.—Cranium large and oval; forehead arched, but rather low and retreating; vertex broad and arched; the space for the downward development of the brain in the occipital region is small; ridge for the insertion of the temporal muscle is rather extensive; the superciliary ridge is not marked; breadth between the eyes is rather great, and the nasal bones are arched, but not highly; the face is broad and flat, and the malar bones stand outwards; the cheek-bones, frontal, upper part of the nasal bones, and the alveolar processes are on the same plane; the anterior nasal aperture is large, and somewhat of the European form; the orbits are large; the alveolar processes are straight, and do not project; the teeth are sound and regular.—*Same Donor.*

No. 457.—Cranium small and oval; forehead arched, but low and narrow, and small compared to the posterior part of the skull; ridges for the attachment of muscles of small extent, and not well marked; superciliary ridge absent; bones of the face small, and the malar bones are flat on the head; the breadth between the eyes rather great, and the nasal bones are on the same plane; the alveolar processes stand slightly forward; the anterior nasal aperture is of the Negro form. This is the head of a young subject, the last molar tooth has not descended: the bones are decayed from having been some time interred.

OVAL SKULLS.

DIVISION 14.—OTAHEITEAN.

No. 458.—This skull is oval, and shows all the characters of the European. The forehead is rather narrow, but is straight and arched; the occiput is prominent; the superciliary ridge slightly marked; the bones of the face are of moderate size; the nasal bones are very highly arched; the alveolar processes are straight, and do not project.—*Presented by Mr. Atkinson to the Mechanics' Institution of Chatham, from which it was purchased.*

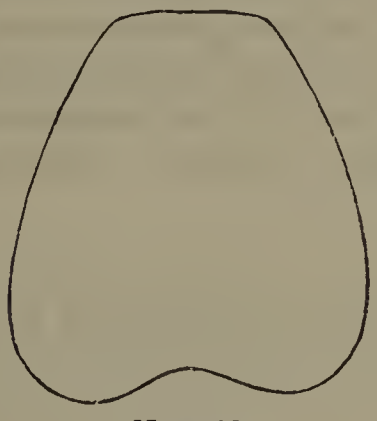
Class IV.—BROAD AND FLAT-FACED SKULLS.

The face is broad, the malar bones stand outwards, and the zygomatic arch has a sweep in the same direction; the nasal bones are more or less arched; the alveolar processes are generally straight, sometimes projecting; the transverse diameter of the base of the skull is great compared to its antero-posterior diameter.

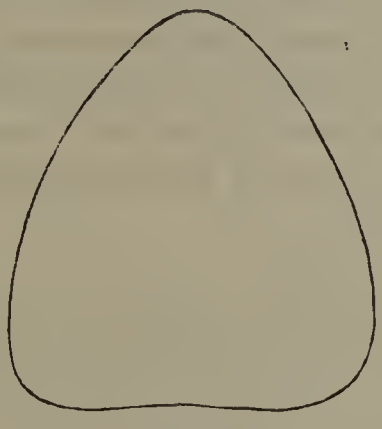
DIVISION 1.—BURMESE, MALAYS, &c.

Of these there are nine in the Collection: they are large skulls, of a round or square form. The forehead is broad, high, and well arched, and likewise the vertex; the occiput is broad and well rounded; the ridge for the attachment of the temporal muscle is extensive and well marked, but not more so than in many European skulls; the superciliary ridges are marked, but are not prominent. The distinctive character of these skulls is the broad flat face. The frontal, the upper part of the nasal bones, the malar bone, malar process of the superior maxillary and the alveolar processes are all nearly on the same plane; the malar process of the superior maxillary bone is large and flat, and stands directly out from the body of the bone, causing the malar bone to project in the same direction; the infra-orbital fossa is in consequence small, and the front of the maxillary bone is flat; the zygomatic arch takes a sweep outwards, but not of greater extent than in European skulls; the alveolar processes are long and broad in front, and stand somewhat forward. The anterior nasal aperture is large, and of the form represented in Nos. 463 and 466. The breadth between the eyes is frequently great, and the nasal bones are arched, but not highly, and that in many instances only at their superior half; the teeth are regular and sound, and covered with a black incrustation; the space for the downward development of the cerebellum in the occipital region is extensive; the transverse

diameter of the base of the skull is great in proportion to its antero-posterior diameter; this is caused by the skull being in general of a round or square form, the breadth being in a transverse direction, and the longitudinal diameter being proportionately small. Nos. 463 and 466 show the above cha-



No. 463.



No. 466.

racters in a marked degree; Wormian bones were found in the occipital suture in five instances out of the nine skulls, and in one additional instance there were two, of large size, at the superior angle of the occipital bone; these small bones were also found in three instances in the temporal and sphenoid suture; the lachrymal groove is sometimes of large size, and was formed entirely on the nasal process of the superior maxillary bone in one; the foramen magnum was large in one and small in two; there is a suture in the centre of the frontal bone in one.

TENASSERIM COAST.

No. 459. Skull of a noted character, a native of the Tenasserim coast.—Cranium large, and of a round form; the forehead is broad, high, and well arched, as also the vertex; the space for the downward development of the cerebellum is great; the ridge for the attachment of the temporal muscle is extensive and well marked; the superciliary ridge is well marked; the face rather broad, but the malar bones stand backwards, and are flat on the head; the zygomatic arch is of small extent; the space between the eyes is not great, and the nasal bones are small, triangular, and slightly arched; the alveolar processes are somewhat prominent; the solitary tooth that remains is covered with a black incrustation, and its surface worn down.—*Donor, Mr. Leslie, A.S. 45th Regiment.*

BURMESE.

No. 460. Skull of a Burmese male.—Cranium large, and of a square form; forehead broad, high, and well arched; parietal

protuberances prominent, and the vertex broad; the posterior part of the head is large, and the occiput straight; the face is broad and flat; the malar bones stand rather outwards; the breadth between the eyes is rather great; the nasal bones are oblong and arched, but not highly; the alveolar processes stand somewhat forward; the two teeth that remain are covered with a black incrustation, and their surfaces worn down; the lachrymal groove is formed entirely on the nasal process of the superior maxillary bone; the space for the downward development of the cerebellum is great.—*Donor*, *Dr. Browne*, *D. I. G.*

JAVA.

No. 462. Skull of a native of Java.—Cranium of a square form; forehead broad and well arched, as likewise the vertex; the parietal protuberances are prominent; the occiput is broad, flat, and almost perpendicular; the ridge for the attachment of the temporal muscle is extensive; superciliary ridge very slightly marked; the face is broad and flat; the malar processes of the superior maxillary bones are large, causing the cheek-bones to stand outwards; the breadth between the eyes is great; the superior half of the nasal bones are on the same plane, and the lower half is very slightly arched; the alveolar processes project somewhat; the teeth are regular and sound, and are covered with a black incrustation.—*Donor*, *Thomas Alexander*, *Esq.*

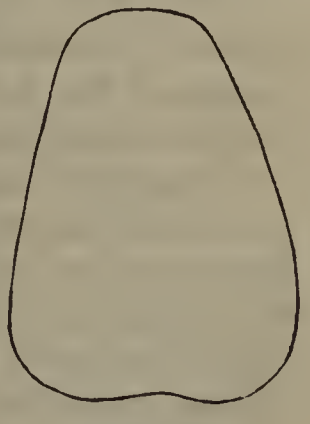
No. 463. Skull of a native of Batavia.—Cranium of a round form; forehead broad, high, and well arched; vertex and occiput round and arched; a suture in the centre of the frontal bone; superciliary ridge very slightly marked; face is broad and flat; malar process of the superior maxillary bone stands directly out from the body of the bone, causing the malar bone to project outwards; the breadth between the eyes is great; the nasal bones are small, and nearly on the same plane at the upper part, but are somewat arched at the lower half; the alveolar processes have a wide sweep in front, and are prominent; the anterior nasal aperture is of the form shown above; the teeth are sound and regular, and covered with a black incrustation.—*Same Donor.*

No. 466. Skull of a Malay.—Cranium of a square form; forehead broad, high, and well arched; a depressed groove across the skull immediately behind the coronal suture, between it and the high and prominent vertex; the occiput is broad, flat, and perpendicular; the superciliary ridge is very slightly marked; the breadth between the eyes is great, and the nasal bones are oblong and on the same plane; the face is

broad and flat; the malar processes of the superior maxillary bones are large, and stand outwards, causing the malar bones to project in the same direction; the anterior nasal aperture is of the form shown above; the alveolar processes are long and broad in front, and project; the teeth are regular and sound, and covered with a brown incrustation; the lower jaw is broad and thick, and its angle very acute; the space for the downward development of the cerebellum is great.—*Donor, Thomas Alexander, Esq.*

DIVISION 2.—CHINESE.

Of these there are three in the Collection. The skulls are of moderate size, and of an oval form. Forehead high and well arched, as also the vertex; the occiput is rounded, and not prominent; the ridge for the attachment of the temporal muscles is extensive and well-marked; the superciliary ridge is also marked in Nos. 468 and 470. In 469 the forehead recedes, and from the temporal region on each side the skull slopes gradually upwards towards the vertex, and forms a rounded arch. In this skull the superciliary ridges are absent; and the face is broad and flat. The frontal, nasal bones, cheek-bones, and alveolar processes are all nearly on the same plane; the face is not so broad and flat as in the Malay's, and the malar bones do not stand so much outwards, and the zygomatic arch is of moderate extent; the nasal bones are small and arched, but not so highly as in Europeans; the anterior nasal aperture is not large, and of this form in No. 468, which is nearly that of the European; the alveolar processes are straight, and not broad in front, as in the Malay skull; the nasal spine is not so large; the orbits vary as to size and form; in two they are circular, of which one is small, and the other large; the teeth are sound and regular; the space for the downward development of the brain is of moderate extent; the transverse diameter of the base of the skull is not greater, compared to its antero-posterior, than in European skulls; Wormian bone were found in the occipital suture in three skulls; there is a suture in the centre of the frontal bone in one; the dried head displays the peculiarities of the Chinese, which will be observed on referring to the description of it.



No. 468.

No. 468. Skull of a Chinaman, who committed suicide by hanging himself.—Cranium of an oval form; forehead broad,

high, and well arched; superciliary ridge marked; breadth between the eyes is not great; the nasal bones are arched, but not highly; the face is broad, and rather flat; the alveolar processes of the superior maxillary bones stand outwards, and the malar bones are large, and have the same direction; the orbits are small and circular; the alveolar processes stand somewhat forward, and the nasal spine is not large. The lower jaw is broad and strong, and the teeth are sound; the last molar tooth on the left side of the lower jaw springs from the ascending ramus of the jaw, and lies horizontally, its crown touching the side of the neighbouring one; this is apparently caused from want of room in the jaw.

No. 469. Skull of a Chinaman from the island of Chusan.—Cranium oval and well-formed; forehead rather narrow, but high and well arched; superciliary ridge not marked; face broad and flat; the malar process of the superior maxillary bone stands somewhat outwards, causing the malar bone to project in the same direction; the nasal bones are arched, but not highly, and they form a smooth, continuous surface with the frontal bones; the alveolar processes are partly absorbed, but they do not project in front; the nasal spine is not strong; the orbits are of a round form; the lachrymal canal is large; the cheek-bones, malar processes of the superior maxillary, the alveolar processes, nasal and frontal bones, are nearly all on the same plane; the external meatus of the ear is large, but this seems to have been caused by disease.—*Donor, W. M. Ford, Staff Surgeon.*

No. 470. Skull of a Chinaman.—Cranium oval and well formed; forehead broad, high, and well arched; a suture in the centre of the frontal bone; superciliary ridge marked; ridge for the attachment of the temporal muscle very extensive, and well marked; the face is not broad, but rather flat; the nasal process of the superior maxillary bone is flat, and the breadth between the eyes is considerable; the nasal bones are very slightly arched; the alveolar processes stand somewhat forwards; the lower jaw is narrow, and its angle very acute.—*Donor, Dr. White, Staff Surgeon.*

No. 471. Dried head of a Chinaman, preserved by an injection of sulphate of alum and arsenic, according to the process of M. Gannel.—The head is oval and well formed; the forehead broad and well arched; the hair in front is cut short, but over the occiput it is long, and plaited into a tail; the face shows the peculiarities of the Chinese, is broad and flat; the cheek-bones stand outwards. The nose is arched, but not prominent. The position of the eye is oblique: the internal

angle is drawn downwards and inwards, the external is drawn upwards and outwards; the alveolar processes and teeth of the upper jaw stand prominently forward. The beard is thin; the teeth are strong, regular, and sound.—*Donor, Mr. Allan, Staff Surgeon, 2nd Class.*

DIVISION 3.—ESQUIMAUX.

There is only one skull of this race in the Collection. The chief peculiarities are, the narrowing of the cranial cavity towards the summit, where there is a prominent ridge, and a gradual shelving on each side; the broad flat face, the outward projection of the malar bone, and the large sweep of the zygoma.

The form of the cranium has no resemblance to that of any other class of skulls. In the Australian and Tambuki Kaffirs there is a ridge along the summit, and shelving on each side; but the difference between them is very great on comparing the three classes of skulls. The points of resemblance between the Esquimaux and Malay skulls are, the broad flat face, outward projection of the malar bones, and the transverse diameter of the base in both being great.

The anterior nasal aperture is small, and of this form. A very large triquetra cuts off the superior angle of the occipital bone The details will be found in the description of the skull.

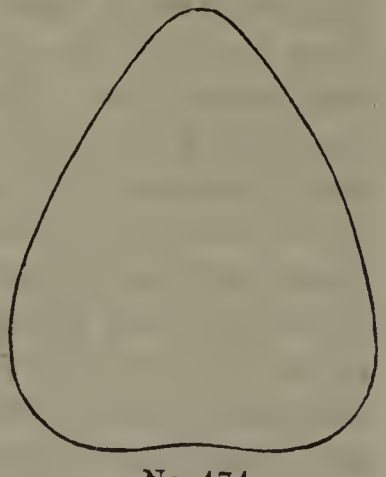
No. 472.

No. 472. Skull of an Esquimaux from Winter Island, latitude 66½°, longitude 83°. —The cranium is large, and its longitudinal diameter very great, compared to its transverse diameter; the forehead is broad and arched; the skull becomes gradually narrow towards the summit, forming a ridge which runs backward from the centre of the frontal bone towards the occiput, which is narrow and prominent. The superior angle of the occipital bone is cut off by a suture; the superior part of this bone forms a very large triquetral bone; the ridges for the attachment of the temporal and other muscles are not marked; the superciliary ridge is slightly marked. The breadth between the eyes is not great: the small portions of the nasal bone that remain show that they have been of a triangular form, and somewhat arched: the face is very broad and flat: the zygomatic arch stands out from the head, and forms a large segment of a circle. The malar processes of the superior maxillary bone are large, and stand directly out from the body of the bone, causing the malar bone to project in the same direction. The

alveolar processes are large, and project somewhat; the anterior nasal aperture is small, and not so large nor wide at its lower part as in Europeans. The cheek-bones, malar process of the superior maxillary, alveolar processes, nasal bones, and frontal bone are nearly on the same plane. The orbits are not large, and are of a circular form; the transverse diameter of the base of the skull is not longer in proportion to the antero-posterior, when a line is drawn across the base of the skull between the origin of the zygomatic process and the meatus auditorius, but it is greater when measured from the zygomatic arches; the space for the downward development of the brain is rather small, but not less than in many European skulls. The basilar process of the occipital bone is large: the foramen magnum is rather large; the sockets for the teeth are regular; the four teeth that remain are sound. The bones have a most peculiar appearance; their external surface has not the smooth, polished appearance usually observed, but presents a striated and scaly appearance, the scales being easily picked off: it resembles bone that had been calcined. — *Donor, Professor Monro, Edinburgh.*

DIVISION 4.—AMERICAN INDIANS.

Of these there are four, of which two are large and round, and two compressed, or flat skulls. The first two are large, round skulls. The forehead is broad and arched, but not highly; the vertex is very broad, and the parietal diameter is greater than in any other skulls. The ridge for the attachment of the temporal muscle is extensive, and well marked; the superciliary ridge is prominent in one, and not marked in the other. In Nos. 473 and 474, although the face is rather broad, it is not flat, and the nasal bones are well arched. The malar bones stand outwards, and the zygomatic arch has a sweep in the same direction. In No. 473 the breadth between the eyes is great; the nasal bones are arched, but not highly: the alveolar processes are rather broad in front, and do not project; the anterior nasal aperture is large, and of this form in No. 474. In No. 473 it is large and more rounded, but the margin of the aperture is not perfect: the occiput is large and well rounded, and the space for the downward development of the brain in the occipital region is very great. The transverse diameter of the base of the skull is very great in proportion to its antero-posterior

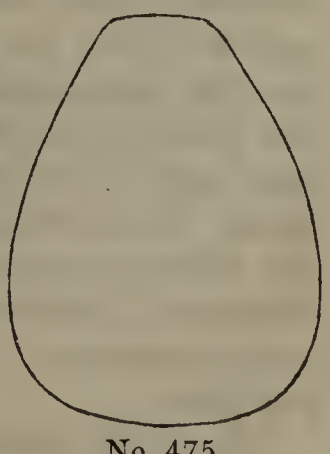


No. 474.

diameter, when a line is drawn across the base of the skull between the origin of the zygomatic process and the meatus auditorius, also when measured from the zygomatic arches and mastoid processes. The orbits are not deep; the lachrymal canal is large; the foramina for the transmission of nerves are larger than in other skulls; the foramen magnum is circular, and of moderate size. The lower jaw of No. 473 is broad, thick, and strong; the teeth are regular, and their surfaces worn down; the incisor teeth are thick, round, and flat, and not sharpened at the point.

These skulls differ from the Malay in the face not being so flat, and the frontal, nasal, malar bones, and alveolar processes not being on the same plane; the forehead is broad, but not so high; the vertex and occiput are much broader than in the Malay. The two compressed skulls show the characters of the elongated and flattened crania. The flat head, American Indian, No. 475, is flattened in a different manner from No. 476, the Carib. In No. 475 the forehead recedes gradually, and slopes upwards and backwards towards the vertex, from which the occiput descends almost perpendicularly, and is broad and flat. In No. 476 the skull is much more flattened, and the occiput pushed backwards; the compression seems to have been applied, not only to the forehead, but also to the vertex, and flattened from before backwards and from above downwards. In No. 475 the compression seems to have been applied to the forehead, and the head to have rested (probably on the cradle) on some hard point of resistance, in this manner, to have produced the flat, broad, and perpendicular occiput.

The anterior nasal aperture is of moderate size, and of this form in No. 475. The foramina for the transmission of the nerves, and likewise the foramen magnum, are of moderate size, and the position of the latter opening is not different from that in other skulls; the transverse diameter of the base of the skull is great in proportion to its antero-posterior diameter: the bones of the skull are generally thick, and of hard texture. The details will, however, be found under the description of each skull; Wormian bones were found in the occipital suture in one instance: the left wing of the sphenoid was entirely cut off from the parietal by a process of the temporal bone in No. 476.



No. 475.

No. 473. Skull of an Indian chief from Fort Marden, Canada.—Cranium of a large round form; forehead broad, but

low, and gradually recedes towards the vertex, which is also low, and of great breadth; the ridge for the attachment of the temporal muscle is extensive, and well marked: the superciliary ridge is prominent; the breadth between the eyes is great; the nasal bones are arched, but not highly; the nasal process of the superior maxillary bone is not large. The face is very broad and flat: the malar bones stand outwards, and the zygomatic arch has a sweep in the same direction; there is a depressed groove on the malar bone, immediately below the external angular process of the frontal bone: the anterior nasal aperture is large, and of an oval form; the alveolar processes are broad in front, straight, and do not project. The lower jaw is broad, thick, and strong; the teeth are regular, and their surfaces are worn down; the incisors are round, and not sharp at the point. The orbits are square, but not deep: the lachrymal canal is large; the base of the skull is very broad, and the transverse diameter is much greater in proportion to its antero-posterior, when a line is drawn across the base of the skull between the origin of the zygomatic process and the meatus auditorius, and also when measured from the zygomatic arches, and likewise the intermastoid line. The space for the downward development of the cerebellum is large.—*Donor, Dr. Wm. Horne, 2nd Class Staff Surgeon.*

No. 474. Skull disinterred from a burying-ground, at Fort Amherstburgh, Canada, by Assist. Surgeon Gordon, 34th Foot; presented by Dr. Wm. Horne, 2nd Class Staff Surgeon.—The cranium is of a round form; the forehead moderately high, and well arched, as likewise the vertex; the ridges for the attachment of the temporal and other muscles are not extensive nor strongly marked: the breadth between the eyes is not great: the nasal bones are well arched, but not very highly; the face is rather broad, but not flat. The malar bones stand outwards, and the zygomatic arch has a sweep in the same direction; the alveolar processes are straight, and do not project. The few teeth that remain are sound, and their surfaces worn down. The lower jaw is of moderate size, the angle obtuse, and the alveolar processes are partially absorbed; the transverse diameter of the base of the skull is greater in proportion to the antero-posterior; the lachrymal canal is large, the orbits are not deep.

No. 475. Skull of a Flat-head North American Indian.—The forehead is very retreating; the face projects to a great extent, and the occiput is flat and perpendicular: the frontal bone begins to retreat immediately above the orbits, and is continued gradually sloping upwards to the vertex, from which

the occiput descends abruptly, and almost perpendicularly to the foramen magnum; the ridges for the attachment of the temporal and other muscles are not extensive, nor well marked; the superciliary ridge is slightly marked; the space between the eyes is not great, and is flat: the superior half of the nasal bones are on the same plane, the lower half being slightly arched: the malar bones stand somewhat outwards, and the zygomatic arch has a sweep in the same direction. The whole of the bones of the face project in front of the frontal bone. The superior maxillary bones project to a very great extent, and the alveolar processes are also very long and projecting. The teeth are regular, and their surfaces very much worn down; the incisor teeth are round and thick, and not sharp at the point. The transverse diameter of the base of the skull is very great compared to the antero-posterior; the space for the downward development of the brain is of moderate extent.—*Donor, Dr. Muir, A. S., 42nd Regiment.*

No. 476. A Carib skull from St. Vincent.—The cranium is flattened to a very great extent from before backwards and from above downwards. The brain seems to have been all pressed backward, and its development arrested to a great extent; the frontal bone recedes immediately above the orbits, and gradually slopes backwards to the vertex, which is not much more elevated than the forehead: the vertex gradually slopes backwards and downwards to the occiput, which projects, and is narrow from above downwards; the occiput is very flat, and nearly the whole of the occipital bone rests on a plane surface. There is no space for the downward development of the brain; the space between and immediately behind the mastoid processes is very flat and hollow; the transverse diameter of the base of the skull is somewhat greater in proportion to the antero-posterior; the left sphenoid is entirely cut off from the parietal by a process of the temporal bone; the bones of the face are partially destroyed; the breadth between the eyes seems to have been considerable, and the bones of the face must have projected to a very great extent; the orbits look upwards, and have a horizontal position.

APPENDIX.

STUFFED FIGURE OF A HOTTENTOT FEMALE.

	Ft.	In.
Height,	4	$7\frac{1}{4}$
Length of superior extremities from acromion,	2	$2\frac{1}{2}$
,, arm from acromion to olecranon process,	0	$11\frac{1}{2}$
,, fore-arm from olecranon process to points of fingers,	1	3
Circumference of arm,	0	9
,, wrist,	0	$5\frac{1}{4}$
Length of lower extremity from the crista ilii to sole of foot,	2	$7\frac{3}{4}$
Circumference of thigh,	1	$7\frac{1}{2}$
,, knee,	1	$0\frac{1}{2}$
,, calf,	0	$11\frac{2}{3}$
,, ankle,	0	7
,, chest round the nipple,	2	$8\frac{3}{4}$
,, waist,	2	$1\frac{1}{2}$
,, pelvis,	3	0

The diameters of the cranium are given in the Tables.

The figure is well-proportioned, as will be seen from the above measurements. The upper and lower extremities are well made; the foot is small, but not well arched, and the toes are widely separated, but this may have been caused in preparing the figure. There is no fat on the inner side of the knees: the upper extremities are remarkably well made, and the hands small, and beautifully formed, and the points of the fingers reach to the middle of the thighs. The figure is straight and upright, the shoulders well thrown back, the neck and chest are remarkably well formed, and the latter well expanded. The breasts are large, and rather pendulous; the waist is small. The abdomen is of moderate size, and not protuberant; the hips are large, and project to a great extent, from the enormous mass of adipose substance under the integuments. There is no hair on the pubes, and the nymphæ hang down to the extent of $2\frac{1}{2}$ inches; it is one inch in breadth at the base, and gradually tapers to a point; its size must have been much greater during life. The head is broad and square; the face broad, flat, and the lower part narrow; the forehead is straight, high, and well arched; the ears are placed far back on the head, the distance from them to the prominent cheek-bones being very great. There is a fold or border posterior to the tragus; the

hair is very short and woolly, and grows in small tufts, leaving the scalp visible between them. The space between the cheek-bones is broad and flat; the external angular process of the frontal bone and the cheek-bones are high and prominent, and the latter stand forward and outwards; these, with the narrow pointed chin, form nearly a triangle. The breadth between the eyes is great, and there is scarcely any perceptible bridge of the nose; the nostrils are small and depressed; the eyebrows are straight, not arched, and the hair is scanty; the eyelashes are thick, but not long. The eyes have only a slight obliquity, the external angle being drawn a little downwards and outwards; their corners intersect somewhere towards the forehead, and not towards the middle of the nose. The lips are thin, and the alveolar processes and the teeth project; the teeth are sound and regular; the incisor teeth of the upper jaw are broad and somewhat sharp at the point; those of the lower jaw are short, thick, round, and truncated, and their surfaces smooth and worn down.—*This Hottentot figure was prepared and presented to the Museum by Andrew Smith, M. D., D. G.*

HISTORY OF AND DISSECTION REPORT ON A BUSHMAN NAMED TERENCE CANNON, MADE BY DR. WILLIAMSON, STAFF SURGEON, SECOND CLASS.

"On the 30th of April, 1845, a squadron of the 7th Dragoon Guards, with 300 Grigua Horsemen, forming the advance of a field force on service across the great Orange River in South Africa, came up with a body of rebel Boers, then in arms against her Majesty's Government. The rebels were about 700 strong, and had two pieces of cannon: they were routed. Lieutenant Gray, at the head of a small party, succeeded in capturing one of the enemy's cannon. This cannon was drawn by twelve oxen, and on the leader was a young Bosjesman, who, with other prisoners, were secured, and accompanied the troops. The following morning Lieutenant Gray was induced to send for the lad, who attached himself to him, and followed him on the return of the troops to the colony, and eventually to England, where he arrived on the 27th of April, 1847, and died on the 21st of April, 1848.

"Lieutenant Gray made many particular inquiries from the Hottentots and Bosjesmans at the time of the lad's capture, and from them, as well as from the lad's own statement, he has no hesitation in saying, there cannot be a doubt but that the lad was one of the very few pure Bushmans still existing across the great Orange River. His mother sold him, when very young, for three sheep to Carl Pretorius, one of the emigrant farmers,

and subsequently an active leader of the rebels on the day they were encountered by her Majesty's troops. The lad was baptized Terence Cannon, and at the time of his death is believed to have been about seventeen years of age.

(Signed) "Hamilton Gray,
"*Captain, 7th Dragoon Guards.*

"*Maidstone, 24th April,* 1848."

On inspection, the first thing that struck the eye was the formation of the head and face. The skin was of a brown tawny colour, nearly the same as the complexion many Europeans present when they have just returned after a long residence in a tropical climate. With the exception of the head, which had all the characters of a genuine Bushman well marked, and the slight tinge of the skin, there was nothing different, on an external view, from a European boy of the same age. He was evidently under fourteen years of age, as there were no signs of puberty, the pubes being destitute of hair; the body was emaciated, and generally well proportioned; the arms of the usual length, the points of the fingers reaching to the middle of the thighs; feet flat, the arch not well formed, and the scaphoid rather prominent; lower extremities in other respect well made, and no masses of fat on the buttocks or on the inner sides of the knees; the hair was very short, black, woolly, and in small tufts, and thinly sown, the scalp being apparent between the tufts; eyebrows black, not curved, but straight, thinly sown, and widely separated one from the other; the openings of the eyes were straight and horizontal, not oblique; nose extremely flat and broad, particularly between the eyes, which were widely separated, being $1\frac{3}{8}$ inch apart; cartilages of the nose extremely flat upon the face, the distance from the lip to the tip of the nose being only $\frac{2}{8}$ths of an inch; the apertures of the nostrils were small, of an oval form, and their greatest diameter in a transverse direction; the cheek-bones were extremely prominent, this, with the great flatness of the nose, nearly brought these three points on the same plane; the lips were large and fleshy, and much turned out; the chin receded, and the angle of the jaw was obtuse; the ears were placed far back in the head, being three inches from the malar bones, but this might be caused chiefly by the projection of these bones; the ears were of moderate size, and well formed, but stood out in a slight degree from the head; there was a fold or border posterior to the tragus; the forehead high and broad, and the hair did not descend low on the forehead, the distance between the eyebrows and hair being two inches; the

vertex was broad and flat, and the parietal protuberances very prominent.

MEASUREMENTS.

	Ft.	In.
Height of body,	4	7
Length of arm from the point of the acromion,	2	0
,, leg from the superior spinous process,	2	$6\frac{1}{2}$
Circumference of chest over nipple,	2	$1\frac{1}{2}$
,, round hips,	1	9
,, of head,	1	$8\frac{1}{4}$
Longitudinal diameter of head,	0	$6\frac{7}{8}$
Parietal diameter of head,	0	$5\frac{1}{2}$
Frontal diameter of head,	0	$4\frac{3}{8}$
Length of head and face,	0	$7\frac{1}{2}$
Zygomatic diameter of head and face,	0	$4\frac{7}{8}$

After a most careful dissection of the whole body, no peculiarity either as regards the form or structure of the soft parts was observed. The skeleton is preserved and placed in the Museum; also, several diseased organs in the pathological department.

SECTIO CADAVERIS, SIXTY HOURS AFTER DEATH.

External Appearances.—Body emaciated; abdomen tumid; and fæculent matter oozed from an opening in the navel.

Cranium.—Brain healthy, and nothing unusual in the appearance or in the structure of the cortical or medullary substance, nor in the size of the nerves, was discovered; weight of brain, 2 lbs. 8 oz. 4 drs.

Thorax.—The pericardium adhered firmly and universally to the surface of the heart by adhesions of old standing; they could, however, be broken down, which showed the serous membrane to be opaque; there were also small opaque bodies of a scrofulous character deposited on its surface. The heart and ventricles were of the usual size for a boy of the supposed age, and free from disease; weight, 7 oz. 2 drs.

Larynx, trachea, and lungs healthy.

Abdomen.—This cavity showed most extensive disease. The intestines and viscera were matted together, and the convolutions adhered very firmly to one another, rendering it impossible to separate them, and formed one continuous surface, which again at several parts adhered to the walls of the abdomen; by this means several sacs were formed, which were filled with fæculent matter; on the surface of the intestines there were numerous openings which communicated with the interior of both small and large intestines, and had allowed their contents to escape; the whole of the peritoneum was very

rough and irregular from the deposition of scrofulous bodies, varying from the size of a pin's head to that of a bean, some of them of firm consistence, others in a state of softening; these scrofulous bodies were deposited in the peritoneal coat, or in the cellular substance beneath, many of them, having become large and softened, had burst both into the interior of the gut and the cavity of the abdomen. On opening the intestines at several places a few small oval ulcers were found; these were also produced by the bursting of the softened scrofulous deposits into the intestines only; the omentum was much contracted, and adhered to the walls immediately below the arch of the colon. The stomach was of the usual form, as also the caput cæcum, to which was attached a vermiform process. The liver adhered very firmly to the diaphragm and surrounding parts, and the same scrofulous deposits were found in its peritoneal covering; it was of the usual form, and its structure was healthy; weight, 2 lbs. 2 drs. The spleen adhered to the neighbouring parts; structure healthy. Supra-renal capsules and kidneys healthy: weight of right kidney, 4 oz. 2 drs.; left, 4 ozs. 4 drs. Pancreas, urinary bladder, testicles, and vesiculæ seminales of the usual form, and healthy in structure.—*This Bushman was presented to the Museum by Alexander Smith, M. D., Staff Surgeon, Second Class, Maidstone.*

MEASUREMENTS OF THE CRANIA.

The measurements were taken in the following manner:—

The *longitudinal diameter* is measured from the most prominent part of the os frontis between the superciliary ridges to the most prominent or distant part of the occiput.

The *parietal diameter* is measured from the most distant points of the parietal bones, or from the protuberances.

The *frontal diameter* is taken between the anterior and inferior angles of the parietal bones.

The *vertical diameter* is measured from the fossa, between the condyles of the occipital bone, to the top of the skull.

The *intermastoid arch* is measured with a graduated tape from the point of one mastoid process to the other, over the external table of the skull.

The *intermastoid line* is the distance in a straight line between the points of the mastoid processes.

The *occipito-frontal arch* is measured by a tape on the surface of the cranium from the suture between the frontal and nasal bones to the posterior margin of the foramen magnum.

The *horizontal periphery* is measured by passing a tape

around the cranium, so as to touch the os frontis immediately above the superciliary ridges, and the most prominent part of the occipital bone.

The *length of the head and face* is measured from the margin of the upper jaw to the most distant point of the occiput.

The *zygomatic diameter* is the distance in a right line between the most prominent points of the zygoma.

The facial angle of Professor Camper was at first taken by an instrument recommended by Mr. Morton, but this was found to be very tedious, and required considerable time, with a frequent adjustment of the different slides and screws of the instrument to take one angle. A very simple method was devised, by which thirty to forty angles could be taken in an hour: it would be impossible to make a description of it intelligible without the aid of a drawing. The accuracy of this instrument was tested in various ways, and found to be correct. Another angle has been given: this was taken by placing the cranium resting on the upper jaw.

For ascertaining the internal capacity of the cranium, vessels were first procured, which were divided into cubic inches. To measure the internal capacity, the foramina were stopped with cotton, and the cavity was filled with white pepper seed poured into the foramen magnum until it reached the surface, and well shaken in order to pack the seed: the contents were then transferred to the graduated measures, and the capacity of the cranium at once read off.

Capacity of the coronal region.—This measurement is the space included between an imaginary plane, drawn through the centres of ossification of the parietal and frontal bones, and the inner surface of the portion of the cranium above it. The sutures or small foramina on the top of the skull were stopped with wax or putty; the centres of ossification of the parietal and frontal bones were marked; the cranium was then inverted and placed in the oval hole of the apparatus (*vide* Morton's Crania Americana) and the points of the slides were pressed against the centres of ossification of the parietal and frontal bones. The mercury was then transferred to the graduated glass measure, and the capacity of the coronal region read off in cubic inches and parts.

The *subcoronal region* was ascertained by deducting the capacity of the coronal region, obtained as above stated, from the total capacity.

Capacity of the anterior chamber.—Lines were drawn by means of a carpenter's square and a straight-edge over the ante-

rior margin of the foramen magnum, and through the centre of ossification of the parietal bones, so as to divide the cranium into an anterior and posterior chamber. Pepper seed was then poured into the skull, which was now held in the left hand with the face resting on the palm, the seed being well packed, and, by means of a stiff piece of steel, the seeds were drawn out until the surface of the seeds corresponded with the anterior margin of the foramen magnum and the lines through the centres of ossification of the parietal bones. The seeds were then transferred to the graduated measures.

The *capacity of the posterior chamber* was obtained by deducting the capacity of the anterior chamber from that of the whole cranium.

The whole of the measurements of the internal capacity of the cranium were taken exactly as described in Mr. Morton's Crania Americana, to which I must refer, as it would be impossible to make them understood without the aid of drawings. The capacities of the anterior and posterior chambers, the coronal and subcoronal regions, are very difficult to take accurately; they will be found to be as correct as it is possible to make them; these measurements were, however, taken in the same manner in the whole of the crania, and a comparison may therefore be made between the different races from the results.

All the other measurements can be depended upon, as no error can possibly occur if moderate care is taken.

ANATOMICAL MEASUREMENTS IN INCHES, ETC.

Longitudinal Diameter.—*Greatest.*—Esquimaux, 7·6; English, Kaffirs, New Zealand, 7·4; Chinese, 7·3; Mandingo, Mauritius, 7·2; *Least.*—Greek, 6·4; Albanian, French, Spanish, Bushman, Sandwich Isles, Burmese, American Indians, 6·7; Ashantee, Hottentot, 7·0; German, Egyptian, Beloochee, Affghan, Brahmin, Gentoo, Hindoo, Singalese, Mozambique, Madagascar, New South Wales, Van Diemen's Land, 7·1.

Parietal Diameter.—*Greatest.*—German, 5·7; American Indian, 5·5; English, Albanian, Van Diemen's Land, 5·4; Greek, French, Spanish, Brahmin, Gentoo, Hindoo, 5·3. *Least.*—Ashantee, Mauritius, 5·0; Madagascar, Singhalese, Mandingo, Bushman, Mozambique, New South Wales, Sandwich Isles, Esquimaux, 5·1; Egyptian, Beloochee, Affghan, Kaffir, Hottentot, Burmese, Chinese, New Zealand, 5·2.

Frontal Diameter.—*Greatest.*—German, 5; French, Spanish, English, 4·5; Greek, Albanian, 4·4; Beloochee, Affghan, Esquimaux, American Indian, 4·3; Madagascar, Mozambique, New Zealand, 4·2. *Least.*—Van Diemen's Land, 3·6; Bushman, 3·7;

Brahmin, Hindoo, Gentoo, Singalese, Mandingo, Ashantee, Hottentot, Mauritius, New South Wales, Sandwich Islands, 4; Egyptian, Kaffirs, Burmese, Chinese, 4·1.

Vertical Diameter.—*Greatest.*—Esquimaux, Ashantee, 5·4; French, Spanish, 5·2; Albanian, English, Egyptian, Beloochee, Affghan, Singalese, Mandingo, Kaffir, Mauritius, New Zealand, Sandwich Islands, Burmese, Chinese, 5·1. *Least.*—American Indian, 4·5; Bushman, 4·6; Van Diemen's Land, Hottentot, German, 4·7; Greek, Brahmin, Gentoo, Hindoo, Mozambique, Madagascar, New South Wales, 5.

Intermastoid Arch.—*Greatest.*—German, 15·3; Mauritius, Burmese, 15; French, Spanish, English, Beloochee, Affghan, New Zealand, Esquimaux, 14·7; Chinese, Mandingo, Singalese, Greeks, Albanians, 14·6; Kaffir, American Indian, 14·5; Brahmin, Gentoo, Hindoo, Ashantee, 14·4. *Least.*—Bushman, 13·5; Van Dieman's Land, 14; Hottentot, 14·1; Sandwich Islands, 14·2; Egyptian, Mozambique, Madagascar, New South Wales, 14·3.

Intermastoid Line.—*Greatest.*—German, 4·4; Esquimaux, American Indian, 4·3; New Zealand, New South Wales, 4·2; Greek, English, Brahmin, Gentoo, Hindoo, Kaffirs, Mozambique, Madagascar, 4·1. *Least.*—Chinese, Bushman, Hottentot, Ashantee, 3·7; Albanian, French, Spanish, Egyptian, Beloochee, Affghan, Singalese, Mandingo, Mauritius, Van Diemen's Land, Sandwich Islands, Burmese, 4.

Occipito-Frontal Arch.—*Greatest.*—Esquimaux, 15·4; English, 15·1; Kaffirs, Chinese, 15; Mandingo, 14·7; German, 14·6. *Least.*—American Indian, 13·5; Greek, 14·1; Albanian, Hottentot, Bushman, Sandwich Islands, Burmese, 14·2; Egyptian, Beloochee, Affghan, Singalese, Ashantee, 14·3; French, Spanish, Brahmin, Gentoo, Hindoo, Madagascar, Mozambique, Mauritius, New South Wales, Van Diemen's Land, New Zealand, 14·5.

Horizontal Periphery.—*Greatest.*—English, 26·6; Esquimaux, 21; German, 20·6; Kaffir, New Zealand, 20·5; Mandingo, 20·1; French, Spanish, Beloochee, Affghan, Mozambique, Madagascar, Mauritius, Van Diemen's Land, 20. *Least.*—Greek, 19·1; Bushman, American Indians, Sandwich Islands, 19·4; Albanian, Ashantee, New South Wales, Burmese, 19·5; Egyptian, Brahmin, Gentoo, Hindoo, Singalese, Hottentot, 19·6; Chinese, 19·7.

Length of Head and Face.—*Greatest.*—Esquimaux, 8·6; Kaffir, 8·4; Mauritius, 8·3; New Zealand, New South Wales, Mandingo, 8·2; Mozambique, Madagascar, 8·1; English, Beloochee, Affghan, Singalese, 8. *Least.*—German, Bushman, 7·3; Greek, 7·4; Albanian, 7·5; Brahmin, Gentoo, Hindoo, Sandwich Islands, Burmese; French, Spanish, Hottentot, Van Diemen's Land, Chinese, American Indian, Egyptian, 7·7.

Zygomatic Diameter.—*Greatest.*—Esquimaux, 5·4; German, English, 5·3; Albanian, Kaffir, Mauritius, New Zealand, American Indian, 5·2; Greek, Beloochee, Affghan, Mandingo, Burmese,

Chinese, 5·1; French, Spanish, Mozambique, Madagascar, New South Wales, Egyptian, 5. *Least.* — Hottentot, 4·3; Bushman, 4·4; Van Diemen's Land, 4·5; Ashantee, 4·6; Brahmin, Hindoo, Gentoo, Singalese, Sandwich Islands, 4·7.

Internal Capacity. — *Greatest.* — German, Esquimaux, 100; English, 97·1; French, Spanish, 96; Albanian, 95·5; Chinese, 93; Kaffir, 92·2; Mozambique, Madagascar, 91·5; New Zealand, 90·5; Beloochee, Affghan, 89·3; Mandingo, 89; Egyptian, 88·6; Greek, 88·4. *Least.*—Van Diemen's Land, 78·5; Ashantee, 79·1; Hottentot, 79·6; Bushman, 79·8; American Indian, 80; New South Wales, 80·2; Sandwich Islands, 80·5; Brahmin, Hindoo, Gentoo, 84·4; Mauritius, 85·5; Singalese, 86·8; Burmese, 87·7.

Capacity of the Anterior Chamber. — *Greatest.*—German, 51; Greek, 44·7; Albanian, 43·3; English, 43·1; French, Spanish, 42·5; Chinese, 41·3; Beloochee, Affghan, 40·7; Esquimaux, 40; Mandingo, 39·6; Egyptian, 38·2; Singalese, 37·8; Burmese, 37·7; *Least.*—American Indians, 32·2; New South Wales, 32·8; Ashantee, 32·9; Van Diemen's Land, 33; Hottentot, Sandwich Islands, 33·1; Bushman, Mauritius, 34; Madagascar, Mozambique, 34·7; New Zealand, 35·6; Brahmin, Gentoo, Hindoo, 36·2; Kaffir, 37·2.

Capacity of the Posterior Chamber.—*Greatest.*—Esquimaux, 66; Mozambique, Madagascar, 56·7; Kaffirs, 55·1; New Zealand, 54·6; English, 53·7; French, Spanish, 53·5; Chinese, 51·6; Mauritius, Albanian, 51·5; Egyptian, 50·4; Burmese, 50. *Least.*—Greek, 44·3; Van Diemen's Land, 45·5; Bushman, 46·1; Hottentot, Ashantee, 46·5; Sandwich Islands, 47·3; New South Wales, Mandingo, 47·4; American Indian, 47·7; Brahmin, Hindoo, Gentoo, 48·2; Beloochee, Affghan, 48·4; German, Singalese, 49.

Capacity of the Coronal Region.—*Greatest.*—German, 26; Albanian, Esquimaux, 24; Beloochee, Affghan, 23·1; English, Greek, 22·9; Van Diemen's Land, 22·5; Chinese, 22·3; Egyptian, 22·1; Kaffirs, 21·5; Singalese, 21·4. *Least.* — Mauritius, New South Wales, 18·5; Sandwich Islands, Hottentot, 19·1; Brahmin, Gentoo, Hindoo, 19·3; Mozambique, Madagascar, 19·7; American Indian, French, Spanish, 20; Bushman, 20·1; New Zealand, 20·5; Mandingo, 20·8.

Capacity of the Subcoronal Region.—*Greatest.*—Esquimaux, 82; French, Spanish, 76; English, 74·1; German, 74; Mozambique, Madagascar, 72·2; Albanian, Kaffir, 71; Chinese, 70·3; New Zealand, 70; Mandingo, 68·2; Egyptian, 68·1; Burmese, 67·4. *Least.*—Van Diemen's Land, 56; Ashantee, 58·4; Bushman, 59·6; American Indians, 60; Hottentot, 60·5; Sandwich Islands, 61·3; New South Wales, 62·7; Brahmin, Gentoo, Hindoo, 65·2; Singalese, 65·4; Greek, 65·6; Beloochee, Affghan, Mauritius, 57.

Weight of the Skull without the Upper Jaw.—*Greatest.*—New Zealand, 1 lb. 10 ozs. 3 drs.; Mauritius, Kaffir, 1 lb. 9 oz. 4 drs.; Mandingo, 1 lb. 8 oz.; English, 1 lb. 7 oz. 5 drs.; New South Wales, Egyptian, 1 lb. 6 oz. 3 drs.; French, Spanish, 1 lb. 6 oz. 1 dr.; Van

Diemen's Land, 1 lb. 5 oz. 5 drs.; Hottentot, Albanian, 1 lb. 5oz. 3 drs.; Beloochee, 1 lb. 5 oz. 2 drs. *Least.* — Mozambique, Madagascar, 1 lb. 2 oz. 2 drs.; Ashantee, 1 lb. 3 oz. 2 drs.; Bushman, 1 lb. 3 ozs. 3 drs.; Burmese, 1 lb. 6 oz.; Chinese, 1 lb. 4 oz.; American Indian, 1 lb. 4 oz. 4 drs.; Sandwich Islands, 1 lb. 4 ozs. 5 drs.; Brahmin, Gentoo, Hindoo, 1 lb. 4 ozs. 6 drs.; Greek, Singalese, Esquimaux, 1 lb. 5 oz.

Facial Angle of Camper.—*Greatest.*—German, 78°·30; Bushman, 77°·5; Brahmin, Gentoo, Hindoo, 76°; Ashantee, 74°·5; Hottentot, 73°·51; Egyptian, 73°·48; Beloochee, Affghan, 73°·42; Van Diemen's Land, 73°·30; Greek, 73°·16; Sandwich Islands, 73°·15; Mandingo, 73°·12; French, Spanish, 73°. *Least.*—American Indian, 69°; Albanian, 70°·20; Mozambique, Madagascar, 70°·45; Singalese, 71°; Mauritius, 71°·30; New Zealand, Esquimaux, 72°; Chinese, 72°·20; New South Wales, 72°·24; Kaffir, 72°·37; English, 72°·45; Burmese, 72°·47.

Facial Angle, with the Head resting on the Upper Jaw.—*Greatest.*—German, 87°·30; Brahmin, 83°·14; Greek, 83°·2; Albanian, Van Diemen's Land, Chinese, 81°·20; Beloochee, Affghan, 81°·8; Bushman, Sandwich Islands, 81°; English, 80°·50; Egyptian, 80°·12; New Zealand, French, Spanish, 80. *Least.*—American Indian, 74°; Mauritius, 75°; Mozambique, Madagascar, 75°·15; New South Wales, Singalese, 77°·12; Kaffir, Mandingo, 77°·24; Esquimaux, 78°; Ashantee, 78°·16; Hottentot, 78°·51; Burmese, 79°·53.

The Table on the next page shows that ossa triquetra, or Wormian bones, are found as frequently in the occipital suture in the Negro as in the European, and that they are more frequently of large size, cutting off the superior angle of the occipital bone in the former: also the number of instances in which the sphenoid is cut off from the parietal bone by a process of the temporal; the lachrymal groove formed entirely on the nasal process of the superior maxillary bone; a suture in the centre of the frontal bone, and the size of the occipital foramen in the different races. Any further remarks on this subject are unnecessary, as the Table is explicit, and shows the comparative frequency of the various points mentioned.

	Nation or Tribe.	Number of Crania.	Small Ossa Triquetra, or Wormian Bones in the occipital Suture in	In addition to the small Ossa Triquetra, one, two, or more large Ossa Triquetra cutting off the superior Angle of the Occipital Bone in	Wormian Bones in the temporal and sphenoid Sutures in	Sphenoid entirely cut off from the Parietal by a process of the Temporal Bone in	Lachrymal Groove formed entirely on the Nasal Process of the superior Maxillary Bone in	Suture in the centre of the Frontal Bone in	Occipital Foramen large in	Occipital Foramen small in
Oval-shaped Skulls	Grecian,	26	10	. . . . .	6	. . .	. . .	4	. .	1
	Albanian,	1	. .	1	1					
	Maltese,	2	1	. . . . .	1	. . .	. . .	. .	. .	1
	German,	2	2							
	French,	1	1							
	Spanish,	3	1	. . . . .	1	. . .	. . .	. .	. .	1
	Natives of Great Britain,	87	38	1	8	. . .	. . .	8	3	4
	Maniacs and Idiots,	82	40	2	7	. . .	. . .	7	5	7
	Egyptian,	11	3	. . . . .	3	. . .	. . .	. .	1	3
	Affghan,	15	4	. . . . .	2	. . .	. . .	2	. .	3
	East Indian,	25	11	. . . . .	3	2	1	. .	1	5
	Singalese,	5	1	1	1	. . .	. . .	. .	. .	1
	Total,	260	112	5	33	2	1	21	10	26
Skulls with prognathous Jaws, or the Nasal Bones flat and on the same plane. Negro from the West Coast of Africa.	Mandingo,	4	2	. . . . .	. .	. . .	2	. .	. .	2
	Iolof,	1								
	Timmani,	3	1	2	1					
	Sosoo,	2	1	. . . . .	1	. . .	. . .	. .	. .	1
	Kosso,	3	2	1	. .	1	. . .	. .	1	
	Krooman,	5	2	1	. .	1	. . .	1		
	Hansa,	1								
	Fantie,	1	. .	1						
	Attan or Appas,	2	2							
	Papas or Mahai,	3	1							
	Barconka or Moka,	2	2	. . . . .	2					
	Ibo,	10	4	. . . . .	. .	2	. . .	1	1	
	Ashantee,	61	37	2	4	6	9	1	2	4
	Colabar,	4	3	1	1	1				
	Kaunga,	3	3	. . . . .	1					
	Congo,	3	2							
	Miscellaneous Africans,	20	10	4	. .	2	. . .	1	1	6
	Total,	128	72	12	10	13	11	4	5	13
Skulls with prognathous Jaws, or the Nasal Bones flat and on the same plane.	Kaffir,	15	8	. . . . .	2	. . .	1	. .	2	2
	Hottentot,	7	4	. . . . .	. .	2	1	. .	. .	1
	Bushman,	10	5	. . . . .	1					
	Total,	32	17	. . . . .	3	2	2	. .	2	3
	Mozambique,	1	1							
	Madagascar,	3	2							
	Mauritius,	2	1	. . . . .	2					
	New South Wales,	10	7	. . . . .	. .	. .	1	. .	. .	2
	Van Dieman's Land,	2	1	. . . . .	1					
	Total,	18	12	. . . . .	3	. . .	1	. .	. .	2
Oval Skulls.	New Zealanders,	4	2	. . . . .	1					
Skull with prominent superciliary ridge.	Sandwich Islands,	5	3	. . . .	. .	1				
Oval Skulls.	Otaheitean,	1								
Broad-faced Skulls.	Burmese and Malays,	9	5	1	3	. . .	1	1	1	2
	Chinese,	3	3	. . . . .	.	. . .	1			
	Esquimaux,	1	. .	1						
	American Indians,	4	1	. . . . .	. .	1				
	Total,	17	9	2	3	1	1	2	1	2

Besides the above, of which the external measurements, internal capacity, and facial angle have been minutely and accurately taken, the following have since been added in the Appendix to the Catalogue:—

Crania of convicted murderers,		5
,,	English,	1
,,	Russian (Crimea),	3
,,	Modern Greek, Constantinople,	5
,,	Armenian, ,,	1
,,	Jews, ,,	1
,,	Gipsy, ,,	1
,,	Turks, ,,	5
,,	Sikhs,	2
,,	Bengalese,	2
,,	Singalese,	2
,,	Malabar,	5
,,	West Coast of Africa,	5
,,	Kaffir,	10
,,	Hottentot,	4
,,	New South Wales,	5
,,	Van Diemen's Land,	2
,,	New Zealand,	3
,,	Fejee Island,	1
,,	Burmese,	2
,,	North American Indian,	8
	Total,	73

The following casts are also contained in the Collection:—

Casts of European crania, 16 of which are of male-factors who were executed,		22
,,	African crania,	2
,,	American crania,	1
,,	Australian crania,	2
	Making a total of,	27

No. 4. Skull of John, *alias* Rocky Whelan, hanged June, 1855, at Hobart Town, Van Diemen's Land, for robbery under arms. Confessed to the murder of five persons. He made his victim walk before him to the place of burial, and there shot him, robbed him, and then threw him into the ravine.—Forehead rather low and receding; posterior part of the cranium rather large; vertex broad and arched; sutures anchylosed.—*Donor, Dr. Atkinson, D. I. G.*

No. 7. Russian skull, from the Crimea.—Cranium oval and unsymmetrical; the right side of the frontal bone and left side

of the occiput are considerably depressed; forehead rather low and receding; skull otherwise well formed; nasal ridge highly arched.

No. 15. Skull from the Armenian burial-ground at Scutari, on the road to Kollalie.—Skull large and well formed; forehead rather retreating and small compared to the posterior part of the cranium; vertex broad and well arched.—*Presented by G. Williamson, S. S., 2nd Class.*

No. 16. Skull from the Jews' burial-ground, on the road to Kollalie.—Forehead low and receding; posterior part of the cranium large compared to the anterior; superciliary ridge high and very prominent; nasal bones arched, with a depression at their root.—*Same Donor.*

No. 17. Skull of a Gipsy, from Constantinople.—Cranium oval and well formed; forehead high; vertex well arched, and occiput well rounded; a suture in the centre of the frontal bone; nasal ridge well arched; alveolar processes perpendicular.—*Same Donor.*

No. 18. Skull from the Turkish burial-ground at Scutari. —Cranium large, round, and very capacious; forehead high; vertex high, and very well arched; occiput rounded; space for the downward development of the cerebellum considerable; nasal bones well arched.—*Same Donor.*

No. 19. Skull from the Turkish burial-ground at Scutari. —Cranium very large and capacious, and exceedingly well arched; forehead high and broad; vertex high, and occiput well rounded; facial bones well placed; the alveolar processes perpendicular, and the facial angle very high; lachrymal canal large.—*Same Donor.*

No. 23. Skull of a Sikh soldier, taken from the field of Gujerat a few days after the action on the 21st February, 1849.—Cranium has all the characters of the oval or symmetrical skulls, but it is not well formed, the anterior part of the head being rather narrow; parietal protuberance rather prominent; nasal ridge high and well arched. — *Presented by G. W. Staunton, Esq., A. S., 9th Lancers.*

No. 30. Skull of a Malabar male, aged 69. — Cranium small, but well formed; nasal ridge arched; anterior nasal aperture wide and smooth at the lower part; alveolar processes projecting.—*Presented by Dr. Roe, I. G.*

No. 32. Skull of a Malabar female, aged 26.—Forehead small; nasal ridge arched, with a deep depression at its roots; lower part of the anterior nasal aperture large and rounded off; alveolar processes broad and projecting.—*Same Donor.*

No. 53. Skull of a native of New South Wales.—Cranium

oval and well formed; forehead rather receding; space at the base of the skull for the downward development of the brain of considerable extent; several ossa triquetra; ridge for the origin of the temporal muscle of great extent; superciliary ridge prominent; nasal bones arched; anterior nasal aperture of the European form; alveolar processes of upper jaw hardly projecting; teeth deeply inserted into the alveolar processes; a deep depression on the malar bone, immediately below the external angular process of the frontal bone.

No. 55. Skull of a native of New South Wales, belonging to a tribe occupying a portion of the Darling Downs, Moreton Bay. —Cranium narrow; forehead low and receding; a ridge along the sagittal suture: superciliary ridge very prominent; external angle of the frontal bone large and strong, and the ridge leading upward from it very prominent and strongly marked; a very deep depression on the malar bone; Wormian bones in the lambdoidal and sphenoid sutures; nasal bones, and part of the right superior maxillary bone, destroyed; alveolar processes deep and projecting.—*Presented by Dr. Marshall, A.S., 11th Regiment.*

No. 56.—Skull of an aboriginal native of New South Wales district, New England, who committed murder, and was afterwards murdered by another of his tribe.—Cranium oval; forehead low and receding; a slight elevation along the sagittal suture; great protuberance at the superior transverse ridge on the occipital bone, which is very strong and well marked; superciliary ridge not strongly marked; a deep depression on the malar bone, immediately below the prominent external angle of the frontal bane; nasal ridge arched; anterior nasal aperture broad, and rounded off inferiorly; alveolar processes projecting.—*Presented by Dr. Shanks, D. I. G.*

No. 57. Skull of a native woman of the Lischenault district, Western Australia.—Cranium oval and well formed; forehead rather low and receding; a deep depression at the junction of the frontal and nasal bones; nasal bones arched; anterior nasal aperture broad, and rounded off inferiorly; a depression on the malar bones, below the external angle of the frontal bone; alveolar processes and superior maxillary bones projecting in front of the body of the bone; surface of the teeth worn quite smooth, and of a dark colour.—*Presented by T. Treen, Esq.*

No. 58. Skull of a native of Van Diemen's Land.—Cranium oval; forehead rather low; a ridge along the vertex, and shelving on each side; occiput and parietal protuberances rather prominent; superciliary ridge slightly marked; face short,

and the bones small; breadth between the eyes rather great, and a slight depression at the root of the nasal bones; a depression on the malar bones, below the external angular process of the frontal; anterior nasal aperture is rounded off at the lower part; alveolar processes are short, and do not project.

No. 59. Skull of a native of Van Diemen's Land.—Cranium oval; forehead rather low and receding; superciliary ridge marked; nasal bones small and arched, with a slight depression across their roots; anterior nasal aperture of the European form; alveolar processes do not project. This skull shows few of the characters found in the others from Van Diemen's Land.

No. 61. Skull of a New Zealander.—Cranium oval, and of a small size; forehead arched; vertex broad and well arched; neither the parietal protuberances nor the occiput project; no superciliary ridge; the space for the temporal muscle, immediately behind the external angular processes of the frontal bone, is sharp and angular; ridges for the insertion of muscles not strongly marked; face has a peculiar puckered appearance, difficult to describe; the frontal bone and nasal ridge are on the same level; nasal bones slightly arched; orbits shallow, and contracted at the nasal side by the bulging outwards of the ethnoid bone and orbital plate of the superior maxillary; anterior nasal aperture of the European form; alveolar processes slightly projecting.

No. 62. Skull of a New Zealander.—Cranium oval, and rather long and narrow; forehead low and receding; vertex well arched; ridges for the insertion of muscles not strongly marked; superciliary ridge marked; nasal bones well arched; anterior nasal aperture of the European form; alveolar processes projecting, but not the body of the upper jaw; and the insertion of the teeth are distinctly marked externally by deep grooves; teeth sound and healthy, and smooth on the surface.

No. 63. Skull of a Feejee Islander.—Cranium oval and not symmetrical posteriorly, the left side of the occipital bone being much depressed and flattened; forehead low and receding; vertex well arched, and the parietal protuberance rather prominent; several of the sutures anchylosed; ridges for the attachment of muscles not great; superciliary ridge rather prominent; nasal bones small, but arched, and the nasal processes of superior maxillary not flat, but stands erect; anterior nasal aperture of the European form; alveolar processes slightly projecting.

No. 64. Skull of a Burmese (male).—Cranium large and of a square form; forehead broad, flat, and receding; vertex

very broad and slightly arched; posterior part of the cranium broad, flat, and quite perpendicular. The space for the downward development of the brain is extensive; transverse diameter of the skull great compared to the anterior; ridge for the attachment of muscles not great; superciliary ridge marked; suture anchylosed. Face broad and flat; breadth between the eyes is not great; nasal bones arched; anterior nasal aperture of the European form; alveolar processes slightly projecting, surface of the teeth smooth and flat; and their sides covered with a dark incrustation.—*Donor, J. R. Taylor, Esq., 80th Regt.*

No. 65. Skull of a Burmese (female).—Cranium of a square form; forehead high and well arched; superciliary ridge not marked; vertex broad and well arched; occiput broad, flat, and perpendicular; space for the downward development of the cerebellum great; transverse diameter of the skull great compared to the antero-posterior; face broad and flat; great breadth between the eyes; nasal bones almost flat; anterior nasal aperture wide and rounded off at the lower part; alveolar processes projecting; teeth covered with a dark incrustation, but their surfaces smooth.—*Same Donor.*

No. 67. Skull of a North American Indian from Lake Huron, probably one of the Huron Tribe. It appears to have belonged to a young person.—Cranium oval and well formed; forehead high and well arched; and without any superciliary ridges; vertex broad and flat; parietal protuberances prominent; occiput rounded; large ossa Wormiana in the lambdoid suture. Base of the skull presents nothing peculiar; great breadth between the eyes; nasal bones almost flat; anterior nasal aperture large and of circular form; alveolar processes projecting.

No. 68. Skull of a North American Indian.—Cranium large and oval; forehead low and receding; superciliary ridge strong and well marked; vertex arched; occiput projecting; transverse diameter of the skull not greater than usual; considerable breadth between the eyes; nasal bones arched, outer margin of the superior maxillary bone, which forms the floor of the orbit, broad, thick, and rounded, as also the malar bone; a deep depression on the malar bone below the external angular process of the frontal bone; no depression at the infra-orbital fossa; alveolar processes not projecting; anterior nasal aperture rather wide, and rounded off at the lower part.—*Donor, Dr. Bawtree, A. S. Staff.*

No. 69. Skull of a North American Indian.—Cranium oval and rather narrow; forehead receding; vertex and occiput well arched; ridge for the attachment of muscles not well

MEASUREMENTS OF SEVEN SKELETONS.

SKELETONS.	Height.	Measurements of the Superior Extremity.					Measurements of the Lower Extremity.					Circumference of the widest part of the Chest.	Length of Spine to the Sacrum.	Measurements of the Pelvis.							Transverse Diameter of the Inferior Outlet from the Tuberosities of the Ischium.
		Length of the Superior Extremity.	Length of the Humerus.	Length of the Radius.	Length of the Ulna.	Length of the Hand.	Length of the Lower Extremity.	Length of the Femur.	Length of the Tibia.	Length of the Fibula.	Length of the Foot.			Length of the Sacrum.	Breadth of the Sacrum.	Transverse Diameter of the Crista ilii.	Distance from the Anterior and Superior Spinous Processes.	Antero-posterior Diameter of the Brim of the Pelvis.	Transverse Diameter of the Brim of the Pelvis.	Oblique Diameter of the Brim.	Circumference of the Brim.	
	Ft. In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.
Modern Greek (Male),	6 1½	32½	13½	10½	11½	8	38	19	16	16	10	34½	25¾	5¼	5	11½	10	4	5½	5	15½	4¼
Do. (do.)	5 7¾	30¼	13¼	9¾	10¾	7¼	35¼	18½	14½	14½	9½	33½	25¾	4½	5	11	10	4½	5½	5½	16¾	5
English (Male), .	4 10¼	26	11½	8½	9¼	6½	30	15¼	12¾	12¾	8½	26½	22	3¾	3½	9	8	3½	3¾	4	12¼	4
Do. (Female),	4 6½	23½	10½	7	7¾	6½	26¾	14¼	11	11	7½	25½	20	4¾	4	9	8	3¾	4¾	4½	14	4
Negro (Male), . .	5 2½	27½	11¼	9	10¼	7	33	16½	13¼	13¾	9½	30	22	5	4¾	10¾	9¾	4	5	4¾	14½	4
Hottentot (Female),	4 5½	23½	10	7½	8¼	6	29	15¼	12¼	12¼	7¼	26¼	17¼	4	3¾	7¾	6¾	3¾	4½	4½	13½	4¾
Bushman (Boy) .	4 5	22½	8¼	7½	8	6	27¾	14¼	12	11½	7¼	. .	18½	4½	3	7	6¼	3	3½	3¼	10½	3½
Chimpanzee, . . .	2 1	19	6½	6½	7¼	5¾	10	5	4½	4½	6½	15½	8¾	1½	1	3½	4	2¾	1¼	2	5¾	1

marked; transverse diameter of the skull not greater than usual, nor the space for the downward development of the cerebellum. Superciliary ridges not well marked; face not broad; great breadth between the eyes; nasal bones square and flat, anterior nasal aperture of circular form; alveolar processes projecting; teeth small, and flat on the surface.—*Same Donor.*

No. 70. Skull of a North American Indian.—Cranium oval and well formed; forehead and vertex well arched; occiput rounded; transverse diameter of the base of the skull not greater than usual, nor the space for the downward development of the brain; superciliary ridge marked; face not broad; nasal bones arched, and the space between the eyes not great; anterior nasal aperture of the European form; alveolar processes slightly projecting.—*Same Donor.*

No. 71. Skull of a North American Indian—Cranium oval and well formed, with the exception of the forehead, somewhat receding; vertex and occiput well rounded; transverse diameter of the base of the skull not great, nor the space for the downward development of the cerebellum; superciliary ridge not marked; face not broad; breadth between the eyes not great; nasal bones arched, but not highly; anterior nasal aperture large and wide at the inferior part; alveolar processes projecting and everted.—*Same Donor.*

SKELETONS.

The different measurements of the crania belonging to these skeletons are given in the Tables, and the description of each will be found under the following:—Nos. 25 and 26, Greeks; 371, the Negro; 414, the Hottentot; 423, the Bushman; the skulls of the English, male and female, are not numbered, but are marked as such, and placed at the end of the tables of the crania. The table of measurements of the seven skeletons, on the opposite page, show that the greatest height is that of one of the modern Greeks; and the lowest, that of the female Hottentot and the Bushman boy.

In the two Greek skeletons the lower part of the chest is remarkably large and prominent, which is probably produced by the custom which prevails among the Greeks and Maltese of wearing a tight belt around the waist.

There is nothing peculiar in the English male and female skeletons, except that the former is much below the usual height, and the pelvis is of smaller size.

On comparing the Negro male, which is 5 ft. $2\frac{1}{2}$ in., with

the English male, which is 4 ft. 10¼ in., the measurements of the extremities are found to be proportionally greater in the Negro. The length of the spine is, however, exactly the same in both; the length and breadth of the sacrum is also greater in the Negro. The shortness of the spine is more than compensated in the Negro by the greater length of the lower extremities, which gives it a greater height than the European. The greater number of the measurements of the pelvis are also greater in proportion in the Negro, with the exception of the inferior outlet. The pelvis has somewhat of a square form; the skull appears to be placed somewhat further backwards on the spine, but this is only apparent, and is caused by the greater prominence of the occiput, and the posterior part of the cranium being large. The tibia and fibula are straight, and not more curved in front than in Europeans; the os calcis is arched. The number of the vertebræ is also the same; the bones of the pelvis, and those of the skeleton generally, do not differ in the slightest degree, with regard to form or texture, from the English or Greek. The English female is 4 ft. 6½ in. high, being one inch taller than the Hottentot. On comparing the Hottentot female with the English female, the length of the superior extremities is greater in proportion to the height in the Hottentot; the lower extremities are also longer in proportion. The hands and feet are small and remarkably well formed, particularly the former. The length of the spine is much less in the Hottentot: the breadth and length of the sacrum are well proportioned in comparison to the height of the skeleton; the transverse diameter from the crista ilii, and the distance from the anterior and superior spinous processes, are much less in the Hottentot; the antero-posterior, the transverse, and the oblique diameters, and the circumference of the brim of the pelvis, are nearly the same in both; the transverse diameter of the inferior outlet is much greater in the Hottentot. The Hottentot female appears not to have been fully grown, as the epiphyses of some of the bones are not united to the shafts. The bones are small, delicately made, and in form or texture there is nothing peculiar: the pelvis is oval, capacious, and well formed in every particular; the sternum is composed of fine bones, lying separately in one chain.

The points of the fingers in the Negro, Hottentot, as also in the two Greek and English male skeletons, reach as low as the middle of the femur; in the English female they reach to the lower part of the upper third of the femur. The difference in length of the spine in the Negro and Hottentot, compared

to the English male and female skeletons, may be partly caused by the substance which is introduced to represent the intervertebral cartilage being somewhat smaller in them.

The Bushman skeleton is 4 ft. 5 in. in height, which is the same as the Hottentot female, and the measurements show that it is well proportioned in every part. The height immediately after death was 5 ft. 7 in. The epiphyses of all the bones are not united to the shafts; the length of the upper and lower extremities is one inch less than the Hottentot: the hands and feet are small and well formed. The length of the spine and sacrum is well proportioned, as also the sacrum. The sternum is composed of six bones:—first, the manubrium and one bone lying singly, then four bones in pairs; the lower portion of the sternum was not ossified. The pelvis of each skeleton, with the exception of the Negro, partakes more or less of the oval form.

Art. IV.—*Essays on the Natural History of Syphilis.* No. III. By William Henry Porter, M. D., Professor of Surgery in the Royal College of Surgeons in Ireland; Surgeon to the Meath Hospital and County of Dublin Infirmary; and Consulting Surgeon to the City of Dublin Hospital; &c., &c.

It has been already observed that one of the prevailing characteristics of the syphilitic poison lay in its persistence—its capability of remaining for a length of time within the system, unless expelled by the operation of medicine. True, it may lie dormant, and give no visible sign of its existence, and the patient may actually be ignorant of his condition; but there it is, nevertheless, ready at any moment to put forth its powers of contamination, and prove its presence by extending itself in some unexpected and, perhaps, unhappy quarter. A question then naturally arises—what is the limit of that persistence, or is there any? Is there any time, however remote, at which a patient can calculate on a spontaneous cure, and hope that his blood may at length be purified from the polluting influence of the poison: or, once having contracted the disease, must he bear it with him to the grave if he submits not to medical treatment? Perhaps no question ever exercised a more powerfully practical influence on the health and happiness of mankind, although seldom put distinctly and prominently forward. From John Hunter, the ablest, if not the first, writer that turned his attention to the natural history of syphilis, we derive two remarkable propositions bearing upon this part of the subject: one, that the venereal disease possessed no power of relieving

itself, or of recovery, and must go on progressing and perhaps increasing, unless driven out by mercury; and the other, that mercury was really a specific, and capable of so driving it out and eradicating it in every instance. It is evident that the first of these may admit of two interpretations, one having reference to the symptom, the other to the poison from which the symptom proceeded; and that, viewed in the former of these aspects, it was not only erroneous, but likely to occasion great and grievous error. For example, if a surgeon had a chancre or other venereal ulcer to deal with, and felt firmly convinced that it never would, and indeed never could heal, but must of necessity go on increasing and becoming worse until conquered by mercury, assuredly but the one practical course lay open before him, and he could scarcely be blamed for following it. I think it may be inferred from Hunter's argument on the identity of the poisons of gonorrhœa and syphilis that he entertained that opinion himself,—at all events, proceeding from him, it was adopted on his authority, and followed up with a zeal and pertinacity that proved how highly that authority was valued. During the time this doctrine prevailed, the employment of mercury was unsparing and profuse. All sores, almost without exception, occurring on the genitals, being regarded as syphilitic, were, of course, treated by the specific: if they recovered, well;—if they did not, their obstinacy was attributed to a superior venom in the disease which it was necessary to kill, and the treatment was pushed on to an extent and persevered in for a time that to our modern experience easily explains, not only the prejudices created against it, but the mischiefs it actually wrought. It is unnecessary now to stop to prove that this opinion of the persistency of the symptom was entirely erroneous. When it was subsequently discovered that numerous ulcers on these parts were not syphilitic at all, and when mercury came to be dealt out with a far more sparing hand, it appeared that all ulcers, of whatever nature, might be healed without it, and that only in a very few could anything like unmanageable obstinacy be observed. The disease then was allowed numerous opportunities of running its own course, and it was seen that even genuine syphilis, so far from exhibiting this uniform tendency to grow worse, sometimes showed a remarkable mildness of symptom, and always a disposition towards the healing of one sore previous to the breaking out of another. A remarkable change was thus effected on professional opinion, and, as has generally happened in the history of syphilis, it ran towards an opposite extreme: many surgeons adopted the idea of the disease being susceptible

of a spontaneous cure, and that, as the sore could heal, and the symptom be removed without mercury, so the whole disease might wear itself out independently of medicine or medical treatment. But this opens up the second phase in the proposition with which I started, viz.:—Can the blood, once tainted with the syphilitic virus, become again pure by any unaided effort of the constitution? Can this poison be localized and thrown off by the formation of an abscess, or eliminated by the breaking forth of a cutaneous eruption, by perspiration, or other critical discharge, as so often exemplified in other blood-diseases?—or can its unhealthy condition be gradually and slowly removed by those operations which are constantly, although imperceptibly, working the most important changes in the human frame? In a word, is syphilis in anywise susceptible of a spontaneous cure, or is its character as differing from every other blood-disease fully sustained in this respect also, that, once contracted, all efforts of unassisted Nature are totally inadequate to its removal?

But, previously to entering on an investigation of this point, it will be necessary to determine what syphilis is, or rather what may be the symptom or symptoms, the presence of which will prove at once and beyond dispute the existence of the poison in any individual; and then, in the case of any supposed cure, some means must be devised for ascertaining that the poison is really and truly gone, for it has been proved that a patient may be deeply tainted without being himself aware of the circumstance. And first it seems quite clear that no chancre, let its character be ever so distinctly marked, can be admitted as an infallible test. When it became an ascertained fact that all sores situated on the genitals might be healed without mercury, the next step ought to have been to endeavour to distinguish and mark off the particular one that would or would not be followed by constitutional symptoms; and to ascertain whether many were so capable of contaminating the system, or, if there was only one; with the diagnostic characters of each respectively, in short, to discover whether any chancre could be unmistakably recognised as venereal. But the inquiry took no such useful or practical direction: on the contrary, the chief object seemed to be to determine statistically the proportionate number of cases subsequently affected with secondary symptoms, an inquiry that could not be carried out, because all parties had not agreed on the secondary symptom that was unquestionably syphilitic. Accordingly, the results were anything but uniform. One observer stated the average of contamination to be one case in three; another, one in six; a third, one in ten; and the most trustworthy

report on the subject makes the number so low as one in fifteen: but no one attempted to point out the genuine characters of the syphilitic sore, and in the absence of this information all other, however ingeniously designed and elaborately worked out, became worse than useless, because it created a doubtful and uncertain practice. If fifteen persons apply to a surgeon for advice, it is of small moment to him that he believes or even that he knows fourteen of these are not seriously affected, unless he is able to point out the unfortunate fifteenth, and especially when a failure in his guess (for guess it only is) may involve such very important consequences. I have already on a former occasion examined the experiment of inoculation as practised for the purpose of diagnosis, and showed its insufficiency: it only remains, therefore, to see if there is anything in the sore itself on which reliance can be placed. Of late years very great stress has been laid on the fact of the chancre having a hardened base, even to the extent of making it, if not the test of syphilis, at least the warrant for the administration of mercury, and to a limited extent with reason, for induration has at all times formed part of the definition of a venereal sore. But, regarded in a scientific point of view, it must be rejected, for Hunter himself remarked that many sores which have no disposition to heal have so far the same character; and Ricord, who is the great authority on the subject, and who states distinctly that the non-indurated sore will not be followed by constitutional symptoms, is compelled to acknowledge that the truly indurated ulcer is occasionally not so followed either. Lastly, it may be observed, that other practitioners have certainly met with and described constitutional results as succeeding the non-indurated sore, and, therefore, when all the evidence is taken and compared, it must be conceded that the chancre affords no unquestionable proof of the presence or absence of the syphilitic taint. The non-sequence of a secondary symptom offers no proof that the disease can cure itself: it may not have been syphilis at all.

And next with respect to bubo. It is now pretty generally known that Ricord, and those who take their opinions from him, regard the glandular affections of the groin as twofold: one, the suppurating tumour which succeeds the non-indurated chancre, and is never followed by constitutional symptoms, in fact, which has no claim to the name of syphilis at all; the other, the hardened knot which attends on the indurated chancre, never suppurates, but is always and without fail the forerunner of some secondary affection. In other words, this knotted, gnarled gland is a diagnostic mark of the certainty of future contami-

nation, and if the accuracy of the observation be established, becomes at once a test of syphilis. Now it seems perfectly impossible that such opinions should have been authoritatively stated, unless on some strong foundation, or that they should be received if the ordinary experience of the profession did not in some respects sustain them, yet in either case it appears extraordinary that they should be the result of modern discovery. They refer to a plain and simple symptom, open to observation, obvious to the senses, and situated in a spot where it could not fail to attract attention, yet with all this plainness and simplicity of such importance as to be decisive of the fact of syphilitic contamination; and this symptom has during nearly four centuries of anxious investigation escaped all notice until a comparatively recent period, and even now, when announced, by no means commands a ready assent. For my own part, I cannot coincide with these views. In common with many others, I have been accustomed to consider the true syphilitic bubo as essentially suppurative in its nature; that it is occasioned by the absorption of the poison, of which there is often sensible evidence in the presence of an inflamed lymphatic leading from the chancre to the gland, and, as it were, tracking and marking out its course; and farther, that it may be an effort of Nature to localize and eliminate the poison on its first introduction into the system, and, in case of failure, never repeated. Unfortunately, I cannot tell whether the poison is ever thus arrested and carried off, because I cannot be undoubtingly certain that any bubo is syphilitic, and because, when there might be proof of its nature, it does not occur: I know of no instance of a bubo occasioned by the absorption of matter from a secondary ulcer after the system has been thoroughly contaminated. On this head I have lately seen it stated by an able writer that "in those instances in which the irritation of the lymphatic glands is the greatest, and where, consequently, we have the best evidence that the morbid matter has entered them, there is *very seldom* indeed any secondary syphilitic affection." I have especially noted the words "very seldom," because I believe they exactly express the true state of the matter, namely, that secondary affections rarely follow a suppurating bubo, but that the circumstance of the suppuration or not by no means creates a pathognomonic distinction. I have, at the moment at which I write, a young man under my care in the Meath Hospital, with a deep excavated ulcer of the throat, who had one of the best examples of indurated chancre I ever saw, and who has a large ulcer in the groin, the sequela of a suppurating bubo. There is also in the same ward a good

specimen of the syphilitic lichen on the person of a man who has at the same time an ulcerated bubo at the groin. These cases are not in themselves conclusive, but they are sufficient to throw a doubt on the universality of Ricord's positions, and to show that the condition of the groin, instead of proving a valuable diagnostic, or affording a satisfactory testimony of the constitutional condition of a patient, is in reality of but very questionable importance. As a suppurating bubo, then, may occasionally, however seldom, follow on the genuine syphilitic chancre, so it is perfectly certain that it may be produced by a number of other causes; and, therefore, its presence or absence can furnish no unquestionable evidence of the presence or absence of the venereal taint.

Finally, with respect to the constitutional symptoms, the eruptions, sore throat, ophthalmia, and others, although they are generally so distinctly marked and so very characteristic that few surgeons of experience are at fault in determining the nature of any given case; yet it cannot be denied that doubts will occasionally arise, and difficulties present themselves, that even experience cannot always cope with. Occurring in such varied forms that they may almost be said to simulate every known form of cutaneous disease, possessing only the vague and uncertain characteristic of being of a "copper colour," and even varying in the intensity of that colour according to the influences of heat, exercise, passion, and other causes of excitement, the eruptions have always proved a source of difficulty and confusion to the syphilitic pathologist. Few have attempted to reduce them within the limits of classification, and of those who commenced the undertaking none have completely and satisfactorily succeeded. Besides, it may be observed, that surgeons are not universally agreed as to what is or is not a true and genuine syphilitic eruption—that even at the present day we have some stating that gonorrhœa may be succeeded by a cutaneous affection, and others averring that even of those which are plainly and undeniably venereal, there are two forms or qualities, a mild and a severe one. I grant that to the experienced eye a well-marked papular or scaly eruption affords an evidence which the surgeon is disposed to receive without hesitation and act upon with confidence, but that is not the point at issue: the real difficulty is, that there may be an eruption not so clearly marked, not so well developed, or so characteristically defined, as to render mistake impossible, and, therefore, that an opinion based on this particular symptom may prove erroneous. And, passing further on to the consideration of the sore throat or the sore eye, the diseased testicle or

the diseased bone, or any other advanced and formidable shape the malady may assume, we find the same observations apply: syphilis in its various phases and forms leaves no part unscathed; it attacks the eyes, the ears, the nose, the throat; it pulls away the hair, the teeth, and sometimes, it is said, even the nails: it simulates a multitude of diseases, but, in return, a multitude of diseases simulate it, and hence it follows that as no symptom hitherto mentioned can be unmistakeably predicated of syphilis, so the disappearance of any of the symptoms hitherto mentioned can be no proof of a spontaneous cure: the disease may not have been venereal at all, or, being so, may have been merely withdrawn to lie dormant for a time. It has been sufficiently shown that the poison may remain for years in the blood without affording any sensible evidence, save one, of its presence there, or occasioning any symptom, save one, to create inconvenience or excite alarm. I have already spoken of that single solitary test which amongst blood-diseases is peculiar to syphilis alone, namely, a capability of transmitting the poison to the fœtus in utero. If this occurs to any individual, I care not what kind of chancre he may have had, or what character the eruption bore: I care not what other symptom might have been present, or whether there was any or none; if the parent produces a pocky child, that parent is contaminated with syphilis.

In applying these observations to the question under consideration, it cannot be denied that to a superficial inquirer the disease seems to show a tendency to wear itself out by passing through a number of patients, and something resembling the same disposition may be observed in the individual; for instance, it has been frequently remarked that the same woman, commencing with putrid abortions and red and decomposed children, will, in going through several confinements, produce each time an apparently less tainted offspring, until at length the disease appears so mild that the infant is capable of being preserved by medicine; and if such can happen with the individual, it may be assumed as presumptive evidence that the disease might be exhausted by passing through the many. Again, it is a matter of observation that in societies, as in the single person, the disease seems to change under the influence of time, and to become extremely mild and easily manageable; that its symptoms gradually assume an almost harmless character, and yield so easily to the most common applications, as almost to prove that syphilis may be anything but a formidable malady: and it is, I believe, the opinion of many practitioners at the present day that the venereal disease

is not only no longer the terrible infliction it originally was, but that its nature has been materially changed for the better even within their own experience. All this is apparently true. Perhaps there are men amongst us now, as there were in the first century after its appearance, rejoicing at its subsidence, and calculating the period when it should vanish altogether, and be no more seen: but they will be disappointed; for, like as the young man, confident in his cure, and safe in the fancied enjoyment of perfect health, contaminates a wife, and produces a pocky offspring, so occasionally some marked and fearful symptoms break out in a community, to show that in its quietude the monster was not dead, but sleeping.

In treating of any disease, it is assumed that the symptoms are not exactly the same in form and intensity in every person seized: that some suffer severely—others in a mitigated degree; in fact, that however they may be identical in character, they are different in violence and duration; and these variations are regarded as depending on the exciting cause, on the constitution of the patient, or any of the circumstances familiarly known as modifying and influencing morbid actions. But in syphilis something more may be observed, and varieties, particularly with respect to unusual and extraordinary exacerbations, are occasionally seen, that can only be explained by the existence of some peculiar qualities within the poison itself. Thus it frequently is, or seems to be, acted on by the mysterious and inexplicable agencies that occasion epidemic affections in general, and every practitioner must have observed the occasional prevalence of some one form or some one symptom—that at one time chancres shall be phagedenic, at another, Hunterian, or that some form of eruption more than another shall especially prevail; but the circumstance to be chiefly noticed as calculated to prevent the total subsidence or disappearance of the disease is, that the syphilitic poison, though ever so weak, and seemingly just worn out, is susceptible of sudden renovation, and may be roused up and restored to its originally destructive activity by causes purely accidental. It has, for example, been gravely stated that the original outbreak of the disease—or, as it has been fancifully called, the great epidemic of 1493–5—was nothing more than the exacerbation of some formerly well-known malady, which aggravation was caused by the assemblage of strangers and the crowding of the city at the siege of Naples: and it has been frequently remarked that the collection of large bodies of men, and the admixture of inhabitants of different countries, have generally been followed by some severe though temporary in-

crease of syphilitic affections. M. Parent Duchatelet, in his remarkable work on the prostitution of Paris, affirms that there is a pretty regular decennial decrease in the virulence and number of syphilitic maladies ; but he also notices occasional exacerbations of them under certain circumstances, and indeed it is quite clear, that with such regular subsidence, some renovation must be necessary, or it would soon disappear altogether. He says, that in the years 1814 and 1815 the amount and severity of these affections were so augmented as to throw all the sanitary regulations of the city into confusion. This he attributes to the influx of the prodigious numbers of foreign troops in those years into Paris and its vicinity, and doubtless the numbers of such licentious visitors must have had their effects, as well as the fact of their bringing with them a new or fresh infection. On this subject the paper of Mr. Fergusson on the disease as it appeared in Portugal among the British troops engaged in the Peninsular campaigns, is highly interesting, and his opinions deserving of attention. He observes that there seems to be an inherent principle of deterioration and decay in every department of living nature when restricted within certain limits. Human families waste away and disappear under the influence of too close marriages; the qualities of animals are impaired by what is termed in-and-in breeding; even the seeds of vegetables require occasionally to be transferred to different soils ; and the effect of a neglect of such renovation or renewal is in no instance (medically speaking) more conspicuous than in the loss of the protective properties of the vaccine lymph. He then proceeds to argue, that were it possible to restrain or confine a community or a country so entirely within itself as to preclude all exterior communication, the venereal disease in such place might be expected to follow the general rule, and gradually fade away and disappear ; but as such restriction is manifestly impracticable, the idea of its total subsidence from such a cause is purely chimerical. Then, as to the effect of an intercourse being established between persons that had been perfect strangers, in renovating and restoring the full activity of the virus, the medical history of the Portuguese campaign affords an impressive and important lesson. At the time of the departure of the expedition the aspect of the disease in Great Britain and Ireland was as it ever had been. There was no exacerbation, nor anything to attract attention or excite remark. The troops themselves left their own shores altogether free from complaint, and fit for immediate service ; therefore any contagious complaint from which they suffered afterwards must have been derived from

the inhabitants of the country in which they landed : and the disease as it existed amongst this people was so mild and so entirely devoid of acrimony, that they absolutely disregarded its presence, and never permitted it to interfere with their ordinary avocations. It must be observed that, at the period of which I speak, the Continent of Europe had been long sealed to the English, and our soldiers were as much strangers to the soil of Portugal as if they had come from another world ; any contagious distemper, therefore, contracted there may so far be considered as a new one. They did contract syphilis, but a syphilis so loathsome and so uncontrollable as almost to realize the description of its first and earliest visitation. "In the British army," says Mr. Fergusson, "it is probable more men have sustained the most melancholy of all mutilations during the four years that it was in Portugal, through this disease, than the registers of all the hospitals in England could produce in the last century." It seems plain, then, from these details, that any principle of decay that may exist in the virus of syphilis may be arrested and repaired by an intercourse with strangers, and consequently, in the present condition of human affairs, there is no possible chance of its ever being permitted to wear itself out.

One very important practical question obviously suggests itself here : Why, if the disease can wear itself out and disappear from a community—why has it never so happened, or at all events never been recorded ? Such an event would have been too remarkable not to have attracted attention ; and its not having occurred in the course of nearly four centuries may create a very reasonable conviction that it cannot happen at all. It is very true, that even at an early period, and soon after its first appearance, the whole genius of the malady seemed to undergo a change, and became so mild that many prognosticated its gradual subsidence, and some even went so far as to fix the precise period when it should totally disappear. It is equally true that at this day a change seems to be working upon it in diminishing both its frequency and its danger ; but still here it is—mild and mitigated though it be—as capable of transmission, as far removed from complete eradication, and as likely (if communicated to a stranger) to produce a formidable affection, as it was at the moment of its first appearance. In like manner with the individual, there is no satisfactory evidence of the disappearance of the disease. It may become latent, and remain so during any length of time ; it may, in the successive development of its symptoms, appear to become more mitigated at each return, as has been noticed in the case

of pocky children ; but there is nothing to warrant a belief in its complete removal—no proof that a person with this mild form of disease may not communicate a severe one, and transmit a poison as active and as potent as he could have done at the first moment of his own contamination. I have avoided allusion to any case illustrative of this position, because no one will put faith in the continency of any individual ; and the ready commentary on such a case would be, that it is plainly impossible to ascertain the date of any infection. There are, however, examples on which the surgeon can place reliance, and I have known some in which the existence of the poison was proved after a surprising interval of time. One, most remarkable occurs to me at this moment, in which the persistence of the poison was proved by the birth of a pocky child twenty-nine years after the disappearance of the chancre. For all these reasons I must refuse to believe that the poison of syphilis does or can wear itself out, however respectable the authority by which the opposite opinion is sustained. On the contrary, I feel convinced that its persistency—its power of remaining in the system as long as the system itself endures—is one of the most remarkable as well as one of the most important of its natural characters.

And now, in turning our attention to the curative properties of mercury, and particularly in investigating its claims to the possession of specific powers, the first circumstance to be observed is our utter ignorance of its *modus operandi* in curing venereal. That it does sometimes so cure, it will, I imagine, scarcely be disputed ; but whether by neutralizing the poison and rendering it harmless, or by eliminating and expelling it in some of those fetid discharges it occasions, or by some other hidden and mysterious process, has never been explained. In the absence of such information it is quite clear that the causes which may at any time render the process inadequate or incomplete must be equally hidden from us ; and therefore all that remains is to collect the facts furnished by experience on both sides of the question, and the conclusions they obviously lead to. And first, it must be admitted that there are now, and always have been, particular forms of syphilis, that not only refuse to yield to mercury, but are always aggravated by it; and further, that the more severe and destructive the symptom is, the less under control does it appear to be. Originally, when brought into collision with "the new and terrible disease," it produced such direful effects that "a great many chose rather to die of the disease than submit to it." Most of the old practitioners remarked that it rendered the foul and spreading ulcer

still more formidable, and several of them, though in some respects decided mercurialists, refused to prescribe it for secondary symptoms of any description. In more modern days we have had the testimony of Mr. Fergusson, that in the fearful visitation that fell upon our Peninsular soldiers, mercury always proved an aggravation ; and it is now held almost universally as a principle that all kinds of phagedenic and other unhealthy ulcerations — all forms of rupia, and other similar symptoms—are not only not cured, but decidedly injured by a mercurial treatment. Secondly, it not unfrequently happens that, after a full and fair exhibition of a course of mercury, the poison seems totally uninfluenced by it, and disposed to work out its destructive career as perfectly as if no such remedy had ever been employed. Thus it is not uncommon to see an eruption break forth, or some other secondary symptom appear, either during the administration of the mercury or shortly afterwards. In this case it seems merely incompetent to cure, but is not injurious. It certainly appears strange that one class of symptoms in a disease should be amenable to a remedy, and another not ; neither is it easy to understand how that medicine can be called a specific which seems powerless in proportion to the virulence of the disease it has to cope with : nevertheless, the accuracy of these facts cannot for a moment be denied. In like manner, it seems to be unquestionable that cases of syphilis sometimes occur, that mercury cannot, or at all events does not, cure. Turner, Swediaur, Benjamin Bell, and a number of writers of their day, have dwelt pointedly on this fact; and I think I have seen it somewhere stated that even now mercury fails to prevent the occurrence of secondary symptoms in somewhat more than half the cases in which it had been used. Now, with such a crushing array of evidence against it, one may well ask, how it can have happened that the use of this formidable medicine has been continued and persevered in for nearly four centuries ; discontinued occasionally, to be sure, by reason of its mischievous effects, but always fallen back on as the only reliable and effectual remedy ?—why such an accurate observer as John Hunter should have regarded it as a specific, or Pearson, after long and patient trials, declared that it alone could be depended on ?—and lastly, how it is, that a number of the very best practical surgeons of the present day entertain the opinion, and conscientiously act upon it, that if the poison is to be eradicated at all, it can only be effected by mercury? These are strong and apparently direct contradictions ; they can scarcely both be true, or be reconciled one with the other: and the only mode by which a correct judgment can be formed

respecting them is, by still adhering to facts and the inferences to be deduced from them. It may probably be found that the mischiefs of which we all complain lie not so much in the medicine as the manner in which it is handled.

Mercury is freely and abundantly prescribed in a vast number of diseases, and with a vast number of objects : it is given in large doses and in small ; and its use continued for a longer or shorter time, according to the effect sought for. In some of the more acute affections, as in peritonitis, it constitutes the physician's chief if not his sole dependence; whilst in several of a more chronic nature its alterative effects seem to be equally efficacious : yet neither in the acute or chronic complaint—neither in the rapid or protracted operation of the medicine—do we apprehend any of the deleterious results that render its employment in syphilis so hazardous. When prescribing for an inflamed eye or a congested liver, no one entertains a dread of inducing carious bones or sloughing or phagedenic ulcers ; and it almost seems as if a medicine employed with safety and success for any other disease reserved its mischievous powers for syphilis alone. It may be useful to inquire into the causes that occasion these remarkable differences, and endeavour to apply them to our dealings with venereal.

Without entering into any lengthened dissertation on the properties of mercury, which would be here entirely out of place, it will be sufficient to remark :—1. That it is a powerful medicine, the sanative effects of which are generally accompanied and indicated by a determination to the salivary organs: not that this result is absolutely indispensable, but that its presence is natural and salutary. 2. That it is, at the least, an equally powerful poison, the effects of which are various,—as sometimes exhibited on the skin and mucous membranes, sometimes on the fibrous structures, and at a later period on the nervous system ; but occasionally combining with any other poison that may be present in the system, aggravating the symptoms occasioned by it, and of course enhancing the danger. 3. The general or constitutional effect of mercury, on its introduction into the system, seems to be an excitement of fever, acceleration of the pulse, disturbance or loss of sleep, headach and loss of appetite, which fever continues with more or less activity during the entire time the patient is under its influence, and is always liable to be exasperated or otherwise deranged by irregularities, intemperance, exposure to cold, improper diet, and other sources of irritation. 4. When from any cause mercury disagrees, its sanative powers are suspended,

—it cannot operate as a medicine and as a poison at one and the same time—and hence in all the numerous derangements occasioned by its injudicious or improper use, its anti-syphilitic properties are never exerted. Any quantity will, under such circumstances, be administered in vain. Now in almost all cases, except venereal, when mercury is about to be employed, there has probably been some suitable preparation,—the patient is confined to his room, perhaps to his bed; he has been the subject of medical treatment, has been purged, it may be, bled, and he is closely watched and restricted as to regimen and diet. Again, the state of his general health, and any peculiarities of habit and constitution, are closely scanned, and the form of the medicine and its dose selected and administered accordingly. In syphilis all these precautions are not so much neglected as wilfully cast aside. Unfortunately for the patient, the disease does not lay him prostrate or incapacitate him for the ordinary duties of life: he is up, going about, endeavouring to follow his usual avocations: and, perhaps, in his anxiety for concealment, seeking out indulgences and courting exposures that he would otherwise have anxiously avoided. Mercury is here prescribed, not only without previous preparation, but its use is persevered in under most hazardous circumstances. Now let it be supposed that from cold, intemperance, or any similar cause, the medicine begins to disagree, at that moment its anti-venereal powers cease to operate, the sore or the symptom refuses to yield, becomes stationary, or spreads; and if the nature of the case is mistaken, and the mercury pushed farther, with the view of subduing a stubborn venereal affection, the consequence may be easily anticipated. Again, it must be recollected that mercury is not given to remove a symptom, but to eradicate a poison,—not to heal a local ulcer, but to cleanse and purify the entire system,—and if its use is discontinued before the latter object is obtained, the mischief will, of course, return again,—the disease will not be cured. But this is the history of a large proportion of those who take mercury for the earlier symptoms of syphilis: as soon as the ulcer is cicatrized, either under the impression that the cure is complete, or anxious to escape the restrictions (slight as they may be) that are imposed on them, they lay it aside, and, it is unnecessary to add, the poison is not removed. Here are two frequent causes of failure quite different, nay opposite in their natures, but assuredly it would be scarcely fair to attribute either to a want of specific virtues in the medicine.

There are certain forms or symptoms of venereal which mercury seldom cures, for the simple reason that it is seldom

prescribed when they are present. Thus in cases of phagedenic and sloughing chancre, sloughing bubo, rupial and tubercular eruption, and diseases of the bones, the medicine is, by almost universal consent, entirely forbidden. I am not now about to impeach the validity of this practice, or the doctrine from which it proceeds, but surely there are one or two questions worthy of consideration before this sweeping sentence of condemnation is acquiesced in. For example, has mercury been employed in any given case, and if it has, how much of its failure is fairly due to it, and how much to the venereal virus? I believe there can be no doubt that ulcers have been rendered phagedenic and spreading by the medicine disagreeing, and in the tertiary stages it is so rare to meet with any advanced case in which mercury has not been tried, or in which that trial had not been irregularly and ineffectively conducted, that really no conclusion as to the efficacy of its specific powers can be safely drawn from them. These powers seem never to have been fairly tested, or its virtues fairly examined. The same fatality that from the commencement has overshadowed the disease, has fallen on its specific remedy also,—that as the one has never been completely understood, so the other has been constantly mismanaged. Here, for example, is a medicine that all practitioners admit possesses poisonous qualities, and all persons, whether medical or otherwise, regard with undisguised apprehension, yet is it constantly prescribed without any previous preparation, continued without proper supervision, omitted at one time, resumed at another, and often persevered in to an unlimited and most pernicious extent. When any other powerful medicine is about to be employed, certain stringent regulations are insisted on,—if it, perchance, possesses poisonous properties, the greater precautions are enforced,—and if these are neglected or contemned, the blame falls, not on the medicine, but on him that dealt so unfairly by it. Not so, however, in the case of mercury; men seem to suppose that they may pursue their ordinary avocations, eat and drink as they please, brave any vicissitude of season, and risk any kind of exposure, and at the same time expect this much-dreaded medicine to exert only its kindly and curative influences on them. Now, were I permitted to speak from my own experience, I should say, that mercury is a specific in these very forms of disease, provided they are venereal. Every day I treat phagedenic chancres, in the hospital, with mercury, and let those that witness the practice speak as to the result: if I do not do so with the carious bone and the rupial scab, it is because the conviction is strong upon

my mind that they generally spring from a mixed disease, and ought not to be regarded as syphilis.

Besides these, there are numerous cases in which the medicine does not cure; not from any incompetency in itself, but that it seems to be unsuited to the condition and circumstances of the patient, and is, therefore, seldom prescribed. Many of the older practitioners, quite afraid of the mischief occasionally wrought by it, attributed to it a power of stimulating other morbid actions into activity, which otherwise might have lain dormant; and therefore in persons of bad and broken systems, or where there was internal visceral disease, threats of tubercular consumption, or strumous glandular enlargements, they hesitated to employ it at all; and in modern times, when the medicine has become in every respect still more unpopular, these prohibitory cases have not diminished in number or frequency. Few surgeons now order mercury in cases of wretched constitution or debilitated frame; and yet that extreme caution may not only be unnecessary, but lead to injurious results, for it is quite possible this miserable condition may have been induced by syphilis,—that it may, in fact, be a venereal symptom, and consequently more likely to receive benefit than injury from the specific, if specific it is. Again, the presence of visceral disease is held to form an insurmountable objection; and here the former consideration can have no place, inasmuch as it is generally believed that syphilis does not and cannot engage an internal organ. I know not how true this may be as a pathological position, but of this I am perfectly certain, that I have seen a disease exactly resembling pulmonary consumption cured by mercury, and I believe that visceral diseases are often induced by, and are actually symptoms of, that state of cachexia occasioned by the presence of the venereal virus, and ought to be mitigated, if not removed, by an antidote to that poison. Lastly, glandular enlargements, and other supposed evidences of a scrofulous diathesis, are laid down as contra-indicating the medicine; but to this proposition I can by no means agree, and, if it was true, it would be a difficult matter to say where it might be safely prescribed. But, after all, whither do these objections lead, and what do they prove? Certainly not that mercury is unable to cope with and to conquer the venereal poison, if fairly brought into collision with it, but that unhappy complications may exist in which it would be injudicious to make the trial.

It is quite manifest that, under the influence of extreme opinions, the really sanative powers of mercury never can be,

as they never have been, fairly tested. It has been proved by the experience of nearly four centuries that, under favourable circumstances, it is capable of neutralizing or expelling the syphilitic virus, and that no other substance with which we are acquainted is endowed with similar powers; but it has been also proved, by the same extent of evidence, to be sometimes incapable of curing the disease, and that it is especially thus powerless when it happens to disagree with the patient. Assuredly, the proper method of dealing with such a medicine ought to have been, not to raise a senseless outcry against it, and endeavour to drive it out of use; not to condemn it as a poison, a thing to be shunned and avoided, but calmly and dispassionately to inquire, first, whether this universal denunciation is deserved; and secondly, allowing it to possess deleterious properties, whether they may not be so mitigated or neutralized, by judicious treatment, as to become comparatively harmless. These are practical matters that may not be discussed here: it must suffice to say that, after an extended experience, I believe mercury to be a specific for syphilis, and I confidently act on that opinion. It is true, I never administer it to any patient unless he is perfectly and completely under my own control, amenable to my directions, willing to submit to any restrictions, and to obey any orders I impose. For example, I never prescribe it for any extern patient at an hospital, nor for any one, under any circumstances, whom I have reason to suspect of insubordination. I never (if it can by possibility be avoided) wish to order it for any person advanced in life, because, when continued to the extent necessary to cure syphilis, it induces a fragility of the blood-vessels that leads to apoplexy or some similar affection. There is a class of persons, pale, sickly, and hysterical, of soft and flabby structure, and leuco-phlegmatic temperament, with whom mercury is never found to agree, and, of course, with such I am most unwilling to employ it; but with these exceptions, and a few others that must occur to every practitioner of observation, I believe its use to be free from much of the peril usually apprehended from it, and might be most advantageously extended.

There is a circumstance that occasionally occurs in practice which may be mentioned here, as connected with this part of the subject: it is that, not unfrequently, after a fair and full exhibition of a course of mercury, the poison seems totally uninfluenced by it, and disposed to work out its destructive career as perfectly as if no such remedy had ever been employed. Thus, it is not uncommon to see an eruption break

forth, either during the administration of the mercury, or immediately afterwards. This is an occurrence that does not admit of doubt; it has happened too frequently not to have been observed by every practitioner; and the object now must be, not to gainsay or deny, but endeavour to understand it. Hunter, who observed this fact, thought he could explain it by supposing that, within any part about to exhibit a venereal symptom, there was previously "a disposition" to produce such symptom, and that, when once this disposition became fairly established, the process would go forward uninterruptedly, in despite of any quantity of mercury. There is even more than Hunter's usual obscurity in this expression; but it seems to imply that, when a symptom is about to be developed, certain changes occur in the nutrition and other vital processes, which changes lead directly to the production of such symptom, and end with its development; and that, when these processes have commenced, they will go forward to completion, notwithstanding the use of the antidote. I think the doctrine involved in this opinion is, to a certain extent, true, although the practical inferences are false, for he seems to regard this disposition as a diseased action, with which mercury is unable to cope, instead of an effort of nature towards recovery, with which mercury has nothing to do. It is not unreasonable to suppose that the breaking forth of an eruption may be, as in other cases of morbid poisons, an effort of nature to eliminate and expel the poison,—in short, to purify the blood. The effects of mercury may be regarded as working in precisely the same direction, but accomplishing the object in some different manner; and so far it seems possible that these two processes might be carried on in the same individual, and in the same part, without interfering one with the other. Unfortunately, too little is known of the manner in which the blood becomes contaminated with the poison, or cleansed from it afterwards, to permit of any certainty on the subject, and therefore all that can be done in this instance, as in others, is to observe the patent facts that fall within our observation, and reason fairly and truthfully upon them. Now, most practitioners, when they remark the appearance of an eruption on a patient fully under the influence of mercury, consider it as an evidence of the medicine having, in that instance, lost its specific virtues, and of the disease progressing in consequence. Such inference is apparently not unreasonable, no more than is the practice that follows, namely, the suspension or discontinuance of the use of the metal for a time. They consider that the mercury has failed to eliminate the poison or purify the blood, and they

cease to prescribe it lest it should prove injurious, thus permitting the disease to proceed without interruption for the present, but with the full intention of treating it by a course of mercury at some subsequent period. The other view, that which regards the eruption as an effort of nature for the restoration of health, and considers the mercury as likely to assist in the same work, though in a different way, will never look on the two processes as antagonistic, or incompatible with each other. For some years past I have ceased to interrupt the course of mercury even for a day, although an eruption may appear while the patient is under its influence, and I cannot call to mind having ever had reason to regret the practice; indeed, were a conjecture warrantable in so obscure and difficult a matter, it would be that a smaller quantity will suffice to effect a cure, under such circumstances, than may be necessary even in ordinary cases. It appears to be most essential that every surgeon should form distinct and determined notions on this part of the natural history of syphilis, because of its practical importance. If Hunter's views were strictly true, they would place a practitioner in such a state of uncertainty that he would be absolutely afraid to prescribe for a single venereal patient, lest his professional reputation should be ruined by a reappearance of the disease. No one can tell when the disposition to secondary symptoms is formed in any individual; it might be three weeks in one person, and three months in another: we have seen that, in some, it is never formed at all, and there is nothing to indicate the event in any. No one could be cured of syphilis unless the symptoms and sores were actually present: a circumstance contradicted by every day's experience. Such are the arguments that might be adduced by a surgeon who respected Hunter's opinions, but found himself unable to subscribe to them; by others, who esteem practical experience above all authority, the matter would be examined with much greater freedom. We know that, between the subsidence of one class of symptoms and the appearance of another, a considerable interval often exists. How much of that interval is to be allotted to the disposition? If it be the whole of it, then no person could ever be cured by mercury at all; if a part of it, in what state can the patient be said to be when he has no sore or symptom, and no disposition to the development of one? Such an expression would imply, not so much a latency as a perfect absence of disease. Now, we further know, by melancholy experience, that a man may have not one only, but a succession of pocky children, he not exhibiting a single symptom; and as it cannot be said

that he has not the disease, this fact will divide it into three periods, that of latency, that of disposition, and that of symptom, two only of which mercury can cure. This may be true, but it does not appear probable. It is difficult to imagine a latent stage of any disease, and an open and apparent one, both curable by mercury, and an intermediate one, on which it will have no effect whatever: it appears most unreasonable, opposed to all analogy, and will require substantial proof before it is accepted as truth. But if the "disposition," and the effort of nature to get rid of the poison, be regarded as one and the same thing,—as a vital process by no means antagonistic to the mercurial action, and which will not be disturbed or interfered with by it, there can be no reason for discontinuing the use of the metal, or apprehending dangerous consequences from it. No doubt, with the prevailing opinions on the subject, it is distressing to see a crop of eruption appear on a patient whilst fully under the influence of mercury, and the patient himself is not likely to feel satisfied at perceiving new symptoms spring up just as he had expected to have been released from the old. No doubt it must be disheartening to all parties to believe that all the medicine had been taken, and all the confinement and privation endured, in vain; and many good surgeons, harassed by such occurrences, decline to prescribe for chancres of five or six weeks' standing, lest this much dreaded disposition should come in their way, but wait the appearance of secondary symptoms, and then cure all together. It is only, then, for the surgeon to determine for himself the light in which he is to regard the occurrence. If he believes it an indication of the medicine having lost its specific virtues, he had better suspend its use, and wait; but if, with me, he can regard it merely as a sanitary effort of nature, not incompatible with the mercurial action, he will quietly persevere in its use, and, I suspect, will ultimately be rewarded by finding it as successful in these cases as he is accustomed to meet with it in others.

Art. V.—*Ophthalmic Hyperæsthesia considered in Relation to Strumous Ophthalmia; with practical Remarks on the latter Affection.* By Henley Thorp, M.D., F.R.C.S.I., Letterkenny.

Recent pathological investigations, and more especially those into the nature of blood diseases, have greatly tended to modify and correct our views respecting many morbid conditions previously imperfectly understood or erroneously interpreted. Several diseased states and physical alterations of structure, not long since regarded as primary or local, are now viewed as complications or consequences of some antecedent constitutional disorder, and traced in a retrograde direction, in some instances through two or even more sequences, back to their remote origin. This mode of studying diseases generally is particularly applicable to those of a scrofulous character; and the first object of the present communication is to establish the just pathological status of one very familiar member of that extensive family, namely, scrofulous ophthalmia. The inquiry is one not merely of theoretical interest, but of much practical importance; and as I believe that, in all cases of this disease there exists, of necessity, a special pathological condition, hitherto not clearly defined or distinguished from associated phenomena, I shall first bring it under notice.

Photophobia, or intolerance of light,—present, in a minor degree, in some other forms of ophthalmic inflammation,—is pathognomonic of the scrofulous disease. The mere objective symptoms present few peculiarities. In a simpler form of ophthalmia, — the pustular,—similar phlyctenulæ, pimples, and ulcers occur, without intolerance of light; and this latter occasionally exists, *per se*, without any visible alteration of the conjunctiva or cornea. Photophobia is often present independently of inflammatory changes in the eye, and these latter may exist without intolerance of light. I am, consequently, led to view photophobia, with its attendant phenomena, not merely as a symptom of ophthalmic inflammation, but as the expression of a definite and independent lesion of the nervous apparatus of vision; a lesion always present in those cases of phlyctenular or pustular ophthalmia attended with intolerance of light, and which are called scrofulous,—the cause of the most pathognomonic symptoms, it precedes for some time, and always materially modifies the progress of the disease. Ophthalmic hyperæsthesia may be employed to designate this pathological condition, in contra-distinction to amaurosis, which

expresses the converse state of defective energy or anæsthesia of the nervous tissue.

Painful and other distressing sensations in the eye, excited or increased by visual efforts, and by exposure of the organ to light, with spasmodic action of the orbicularis, contraction of the pupil, and profuse lachrymation, are a combination of symptoms familiar to all surgeons. Do these symptoms depend upon morbid irritability of the retina, or of the ciliary and conjunctival branches of the fifth? Or are both classes of nerves necessarily engaged in all cases and varieties of hyperæsthesia? The orbicular muscles of the pupil and palpebræ—the sphincters of the eye—are in powerful action. Does the stimulus of light, in exciting their spasmodic condition, act always through the same incident channels? I believe not. Under ordinary circumstances, light, which is a compound agent, causes contraction of the pupil by the simultaneous impression of its distinct principles upon different nerves. The luminous or chromatic elements are the appropriate and special excitants of the retina, while the "tactile calorific rays" operate exclusively upon the sensitive filaments of the fifth pair distributed to the iris. Consequently, there are two separate anatomical mechanisms combining to produce the same result, and adapted each to receive its own impulse from the divided energies of the same stimulus. Now, the phenomena of disease, like those of physiological action, display themselves in accordance with this duplex adaptation. That the integrity of the optic nerve is not absolutely essential to the active condition of the iris, is attested both by pathological facts and physiological experiments. Its contractile tissue responds to stimuli of various kinds, even when applied to the conjunctiva or Schneiderian membrane[a]; and the activity of the pupil in many cases of amaurosis, as well as the occurrence of photophobia in a few examples of this disease, establishes the fact beyond dispute; and, moreover, that the impression of caloric alone is capable of producing the effect is evident from a case given by Valentin[b], in which the pupil of an amaurotic boy, uninfluenced by light, contracted energetically upon the application of a heated body.

The action of the orbicularis palpebrarum, differing from that of the pupil in being rhythmic, and also under the influ-

[a] Snuffing cold water into the nostrils, and touching the conjunctiva with nitrate of silver, causes the pupil to contract (Larrey, Clinique Chirurgicale, vol. i. p. 427).

[b] Valentin, De Function. Nerv. Cerebr., p. 12.

ence of the will, is maintained by the conjunctival branches of the ophthalmic and the portio dura of the seventh pair, which are respectively the afferent and efferent nerves; but impressions conveyed along the optic can also determine the action of the muscle. This, I believe, is proved by the phenomena of disease, as well as by an experiment of Majendie, in which, after division of the fifth pair within the cranium, the lids closed upon the application of a strong light, although the previous employment of a heated substance failed to produce the effect. Thus, it appears that one or other of the incident segments of the two excito-motory arcs that control the movements of the sphincter apparatus of the eye may be dispensed with, or destroyed, without necessarily interfering with the action of the mechanism; or, in other words, that either the optic nerve, *per se*, or the ophthalmic of the fifth, may, under certain conditions, act, as it were, in a supplemental capacity, and produce the effect which, under ordinary circumstances, is the result of the combined operation of both, namely, the contraction of the pupil and the closure of the eyelids. I shall now apply these principles to illustrate more particularly the phenomena of diseased action, as displayed in the affection under consideration.

Scrofulous ophthalmic hyperæsthesia presents itself under three forms. Two of these are simply lesions of enervation; and in the other, which soon becomes a complicated or mixed affection, the objective symptoms of ophthalmic inflammation are superadded phenomena.

A child of strumous habit, suffering from gastric or intestinal derangement, is observed to show some disinclination to face the light: its hands are frequently raised to screen the eyes, and the lids are kept half closed. This morbid sensibility is greatest in the morning, when the admission of light into the sleeping apartment is productive of most distress, the *sudden glare* compelling the patient to sink his face in the pillow, or cover himself in the bedclothes. The eyes, in the course of the day, become more tolerant, but the hour is uncertain: the weakness may continue till the dusk of the evening, or cease soon after noon, or, in slight cases, at an earlier hour. *Severe pain* is no symptom of this condition: there is, at most, a dull, aching, obtuse feeling of distress, occasioned by the impression of light. The duration of the complaint is variable: one or many days may elapse; it may remit, intermit, and show various degrees of severity, before the decided symptoms of ophthalmia present themselves; or it may disappear altogether, without being followed by or attended

with any appearance whatever of inflammation or congestion of the eye. This is the history of the first form of the affection. It is evidently a lesion of the optic nerve and retina, and may be denominated scrofulous optic hyperæsthesia[a].

The next type of the disease is that which I have called complicated, because quickly followed by all the well-known symptoms of strumous ophthalmia, both subjective and objective. To the simple phenomena of hyperæsthesia just described are soon superadded phlyctenulæ and ulcers of the cornea, fasciculated conjunctival vascularity, zonular redness of the sclerotic, and other appearances unnecessary to particularize; and the sensation of *luminous glare* is, moreover, attended with *severe pain*, of a burning or shooting character, striking through the eyeball and temples, which, with profuse lachrymation and frequent sneezing, points to the conjunctival and ciliary branches of the ophthalmic, in addition to the optic, as the source of irritation.

The last of the forms under which strumous hyperæsthesia appears is, so far as my experience extends, the rarest. As yet I have had but few opportunities of studying well-marked examples. Like the first described variety, it is simple, and not commonly attended with any inflammatory affection of the conjunctiva or cornea. The complicated cases lapse occasionally into this form, the symptoms of which, manifesting themselves with the subsidence of the previous ophthalmia, may continue long to harass the patient and perplex the practitioner. It is most characterized by pain, evidently of a neuralgic description, sometimes intermitting, or even periodic, and occurring in paroxysms; occasionally confined to, or more especially affecting, one eye; darting through the orbit or one side of the head, simulating hemicrania; aggravated or excited by exposure of the eye to light; not always, however, bearing in its severity a just proportion to the intensity of the stimulus. The symptoms are often more distressing in the evening than at noon; the eye weeps, and appears slightly congested. It would be unjust to attribute these phenomena to any affection of the optic nerve or retina, whose morbid sensibility is

[a] The term "*optical* hyperæsthesia" is employed by Romberg and others to express increased sensibility of the optic nerve and retina, manifested by chromatic sensations, optical illusions, and phantasmata, occurring independently of external influences or impressions upon the organ of sight. Such phenomena are frequent accompaniments of cerebral disease, and sometimes display themselves as the result of a centric affection, even when disorganization of the optic nerve has occurred. It is unnecessary to observe that hyperæsthesia, employed in this sense, has no reference to the condition of the optic nerve and retina to which I allude,—a condition of augmented sensibility to an appropriate and special stimulus—light.

exclusively expressed by the impression of light producing a luminous glare. The lesion evidently involves the ciliary branches of the ophthalmic, and may be named scrofulous ciliary hyperæsthesia.

Thus are the three forms of the morbid condition under consideration pathologically distinct, characterized by special symptoms, and, as I believe, differently amenable to therapeutical means. Practically, the second type is the most important: it comes frequently under the cognizance of the surgeon, and, in short, is synonymous with scrofulous ophthalmia; but as I believe the lesion of enervation—the cause of the pathognomonic symptoms—to be the essential element of the disease, I have used the term "hyperæsthesia" to give due significance to the local pathological condition first in order; and the adjunct "complicated," to denote the superadded inflammatory or secondary events, of a structural nature, in the conjunctiva, cornea, &c. It may, indeed, be urged in opposition to these views, that the nerves of a part exert an important influence in all diseases, and that a disturbance of their vital endowments is essentially connected with, if not the efficient cause of, inflammation generally; therefore, that I am only attempting a useless refinement of doctrines generally recognised. But are all inflammations of the eye attended with photophobia? On the contrary, do not some of them proceed to the total destruction of the organ, scarcely manifesting throughout their course the symptoms of the affection? Or, on the other hand, it may be asserted that all catarrhal, pustular, and ulcerative affections of the eye, in scrofulous subjects, are not necessarily attended with intolerance of light; and further, that these conditions of the conjunctiva and cornea are sometimes present *previous* to the phenomena of the lesion under consideration, which must consequently be regarded, at least in these instances, as a *consecutive affection*. But such cases are rare exceptions to a general law. Sooner or later, in all strumous inflammations of the external tunics of the eye, the symptoms of hyperæsthesia present themselves, when the aspect of the case entirely changes, a new and altered impulse is given to the morbid action, which modifies and influences its subsequent progress, in a manner quite as remarkable as in the ordinary examples of phlyctenular ophthalmia, in which it *precedes* the objective symptoms. But it is not to be understood that every case of strumous ophthalmia must of necessity establish the correctness of these views, or demonstrate the different forms under which hyperæsthesia may present itself: extended observation, and a close scrutiny into the history of a large propor-

tion of cases, will generally be required. In many examples the analysis may be difficult, or even impossible, owing to the manner in which the three varieties are blended or combined. Thus, in acute strumous ophthalmia, the symptoms of the first and second types display themselves concurrently. Conjunctival congestion is coeval with the earliest manifestations of photophobia; and the phenomena of the third form rarely continue after the subsidence of the local objective symptoms, so as to enable it to be recognised as an isolated affection, although I think it probable that the greater number of well-marked examples of phlyctenular ophthalmia present in their progress, for a longer or shorter period, however obscurely expressed, the phenomena of each.

Scrofulous ophthalmia, or pustular and phlyctenular diseases of the conjunctiva and cornea, attended with photophobia (complicated ophthalmic hyperæsthesia), present themselves under the following conditions:—

1. As a subacute affection in children sometimes otherwise apparently healthy.
2. In a more chronic form in young persons of a decidedly strumous habit.
3. As a relapsing disease in patients who have been the subjects of one or more previous attacks.
4. As occurring intercurrently during the progress of other strumous disorders.
5. In connexion with impetiginous and eczematous eruptions of the scalp and face, or of the surface generally.

Cases of phlyctenular ophthalmia, in young persons of an apparently sound constitution, and otherwise seemingly in the enjoyment of good health, are occasionally presented to the practitioner. The subjects of this form of the disease are sometimes even ruddy, robust, and well fed; the attack is generally rather sudden, and attended with no inconsiderable amount of febrile excitement—hot skin, furred tongue, and hurried circulation; the symptoms of the precursory hyperæsthesia are quickly followed by phlyctenulæ and conjunctival injection; the attack is connected with gastric or intestinal derangement, and is often traceable to some error in diet,—in one patient a meal of unripe gooseberries occasioned the symptoms,—although, indeed, the directly exciting cause is not always evident. The propriety of applying the term "strumous" to this particular form of ophthalmia has been called in question by some surgeons of eminence, and it has been suggested that the expression should give place to one more appropriate or less objectionable. However, there can be little doubt but

that the specific constitutional disease may exist in a latent condition, with many indications of sound health, both physical and functional. Who has not observed the unexpected manifestation of tuberculosis under circumstances defying the best prognostic ability? Where the general condition exists, the most trivial cause may occasion its local development in any organ, and why should the eye be exempt from the operation of this pathological law? The *physique* is not always a certain test, and the ophthalmia itself must be regarded as a proof of the constitutional taint.

But the disease for the most part prevails amongst children of a decidedly strumous appearance, and is usually developed more slowly: the matutinal photophobia and transient conjunctival blush, sickly aspect, pale and bloated face, white tongue, and offensive breath, are generally present for some time previous to the decided outbreak of the local symptoms.

The relapsing tendency of scrofulous ophthalmia is too well known to require more than a passing comment: I may, however, remark, that when relapses do occur, they sometimes present, at first, the simple pustular, and not the true phlyctenular character: the penicillated and partial vascularity of the sclerotic conjunctiva may be present for some days, without the phenomena of hyperæsthesia, or any affection of the cornea; and the timely employment of proper remedies may cut short the disease, and prevent its lapsing into the more serious phlyctenular form.

When strumous ophthalmia occurs in the course of congenerous affections, it is found to be greatly influenced by their progress and symptoms, and its treatment must be conducted with a cautious regard to this important circumstance, that it is often vicarious or supplemental in its character, subsiding and reappearing, or alternating in its attacks, with the manifestation of the same cachexia in other parts or organs. This fact was remarkably illustrated in the case of a little girl, lately under my care for strumous disease of the hip-joint, which terminated in luxation and abscess. A sinus existed in the inguinal region. This child suffered from repeated attacks of ophthalmia; and the closure of the opening in the groin, or the diminution of the purulent discharge, was often the first indication of the coming mischief. In this patient also I had an opportunity of observing, on two occasions, that form of ophthalmic hyperæsthesia which I have denominated "ciliary."

The combination of ophthalmia with pustular and other eruptions of the scalp and face is a circumstance of frequent

occurrence: and here it may be questioned if the ophthalmic surgeon does not too often entrench upon the domain of the dermatologist. The conjunctiva, being a portion of the general cutaneous integument, is liable to similar diseases; and I entertain no doubt but that impetiginous, and other affections of the skin accidentally engaging the eyes, have occasionally been treated for ophthalmia simply, without a proper recognition of their true nature and origin. I shall presently give a case in point.

The treatment of strumous ophthalmia, like that of all kindred affections, is a matter of much difficulty: no local manifestation of the same constitutional derangement requires for its successful management a larger share of patience, vigilance, and practical skill; and whether we regard the importance of the organ attacked, the often intractable character of the disease, the uncertainty of its progress, its perplexing relapses, or its great frequency, the subject is one of paramount consideration; and the copious practical observations in the several treatises on ophthalmic surgery afford ample evidence that its study has not been neglected. It is, therefore, with some hesitation that I venture upon a path so often and so laboriously traversed by other observers, to seek for new remedies, or develop fresh pathological views; yet, as a few precepts of much value are sometimes merely glanced at, or insufficiently enforced, I may be excused dwelling more particularly upon them. I shall also give the result of my own experience as to the adaptation of certain remedies to particular forms and stages of the disease. In no malady has the unscientific and empirical practice of routine operated more prejudicially than in the one under consideration. Scrofulous ophthalmia cannot be judiciously treated according to any particular system or plan; indeed, few diseases require a nicer adjustment of a considerable number of resources to as great a variety of pathological states, both local and general. The indications may occasionally be doubtful or obscure, still, they can generally be fulfilled, and a just appreciation of them is essential to success.

Although strumous ophthalmia presents much diversity in its mode of attack, the great majority of cases will be found to arrange themselves under one or other of the five forms just indicated; I could, therefore, most conveniently, and perhaps advantageously, discuss its treatment under corresponding heads, but, in order to illustrate more fully the views I entertain respecting ophthalmic hyperæsthesia, I shall venture to

arrange my practical observations with reference especially to this lesion, and in accordance with the description I have given of its three varieties.

That form of photophobia first referred to, and which is the expression of scrofulous irritation of the optic nerve and retina (optic hyperæsthesia), is the earliest symptom of a considerable number of cases of phlyctenular ophthalmia. It can often be recognised for many days before the true inflammatory phenomena present themselves; and I am certain that, by proper management, the accession of the latter can often be completely prevented. When, therefore, intolerance of light is first observed in a child of strumous habit, and is attended with the precursory symptoms of gastric derangement already mentioned, more especially if the patient had been already a sufferer from previous attacks, let the treatment be commenced at once; here active depletion is contra-indicated, the aspect of the case forbids it, and the sooner the child is prepared for the exhibition of tonics, the better; and with this view (preceded, in some cases, by a gentle emetic) the greatest benefit will be derived from a combination of gray powder, rhubarb, and dried soda, exhibited at bedtime, and a mild, bitter infusion, with sulphate of potash, on the following morning. After these medicines have been a few times repeated, the tongue will be found cleaner, and the digestive organs much improved; and now the remedy most deserving of trial is quina,—it fully merits all the praise Mackenzie has bestowed upon it: I know of no tonic, in the treatment of strumous ophthalmia, of greater value or more general application: under its use the appetite improves, the bodily vigour is increased, and the intolerance of light diminishes or disappears; nor is it necessary to postpone its use until the tongue becomes quite clean. In cases where the digestive organs continue rebellious, and at the same time tonics are indicated by the general condition of the patient, the quina may be commenced before the alterative or aperient medicines are dispensed with, or it may be advantageously combined with them. But the value of various *adjuvantia* must not be lost sight of: a large, airy sleeping apartment, sufficient exercise in the open air, and a simple but nutritious diet, are matters of no mean importance. In winter, the temperature of the body must be maintained by flannel next the skin, and, in summer, the shower or plunge bath may be employed; at this season, also, the hair should be worn rather short, and the head kept cool. I cannot say that I have derived much benefit from local treatment in this first form of ophthalmic hyperæsthesia: light and pure air are

the best topical remedies, and the child should be freely exposed to their influence. I feel assured that a steady perseverance in this plan of treatment will generally succeed in checking the disease in its simple form, and avert the consecutive affection of the conjunctiva and cornea. When these structures are attacked, the primary lesion of the optic nerve and retina is complicated, and the case becomes one of compound hyperæsthesia, or strumous ophthalmia, in the ordinary acceptation of the term. But, as previously observed, the advent of this disease is sometimes sudden and acute; there may be, from the commencement, much of general febrile disturbance and local erethism, with a quickened circulation and flushed face, and the early conjunctival injection be attended with considerable photophobia and lachrymation. Such attacks are frequently brought on by repletion with crude and indigestible food. Here, the clear indication is to empty the stomach in the first instance, and the prompt exhibition of an emetic is imperatively called for: a few grains of calomel and James' powder should be given at bed-time, and the pediluvium or warm bath also employed, so as to promote the action of the skin, and, on the following morning, it is desirable that the bowels should be adequately freed by the infusion of senna and sulphate of potash; topical bleeding is sometimes required, and it may be necessary to apply a few leeches to the temples, according to the age of the patient, or the acute character of the local symptoms, but the early use of stimulating eye-drops is most decidedly objectionable. I have known the greatest mischief result from their indiscriminate and premature employment: the practice is certain to accelerate the development, or increase the number, of the phlyctenulæ or ulcers, and aggravate all the symptoms. The appropriate applications are of an anodyne or sedative nature, and can be used either in the form of fomentation or vapour. Let a drachm of either of the extracts of belladonna or conium be dissolved in a pint of water, and filtered through lint; to a wineglassfull of this solution hot water may be added at any time, in quantity sufficient to make the whole of a suitable temperature for either steaming or fomenting the eyes; one or other of which processes should be put in practice at least two or three times in the twenty-four hours. At this stage the child must be confined to the house, and the purgative medicines repeated until the bowels have been moderately but sufficiently acted upon, when a most excellent alterative and tonic remedy will be found in a combination of sulphate of quina, gray powder, and dried soda: after some time it may be judicious to omit the mer-

curial, and give the quina alone, and in larger doses. In some of these cases, also, much benefit will be derived from the well-known combination of Huxham's tincture of bark with bichloride of mercury, as recommended by Sir A. Cooper. Counter-irritation is a powerful resource, and ought to be employed as soon as the more acute symptoms have subsided, or about the same time that the tonic medicines are commenced. For this purpose blisters are commonly had recourse to, but details as to their size and management are not always sufficiently regarded; the regions behind the ears and the back of the neck are usually selected, but the top of the head, over the anterior fontanelle, is also a very eligible locality; the blister on the back of the neck should be full-sized, and, in tedious cases, it may be necessary to reapply the vesicants, or keep the surface raw with Albespeyre's paper; but the salutary effects of persistent irritation, confined to one point, is doubtful, and the situation of the blister should be changed from time to time, in cases requiring prolonged counter-irritation. This is a precept of much importance, the validity of which I have often tested. Notwithstanding the best care, however, and the most judicious employment of remedies, both local and constitutional, scrofulous ophthalmia sometimes advances; phlyctenulæ form and burst; ulcerations occur in and around the cornea, and threaten to penetrate the membrane; its substance becomes the seat of interstitial abscess, or, through the diffused haziness which dims its structure, we discern the yellow semilunar streak of incipient hypopyon; the disease is present in its most destructive form, and the eye is in imminent danger. It is an anxious and distressing emergency, rendered more so by the diversified expedients recommended, and the unsettled state of medical opinion as to what line of practice should be pursued: some authorities rely chiefly upon local, and others on constitutional treatment; some employ mercury, and others, bark and tonics; the renewed application of leeches and blisters, stimulating and even caustic collyria, soothing and anodyne fomentations and vapours, and, as a *dernier ressort*, evacuation of the anterior chamber, by acupuncturation of the cornea, are different proposals, for all of which advocates may be found. When the phenomena or conditions of diseased action are complicated, the therapeutical indications are, of necessity, correspondingly embarrassing and uncertain, and it is difficult to lay down precise rules: here, a specific, primary blood disease, a secondary local lesion of the optic and other nerves, and an inflammatory complication, influenced by, if not immediately depending upon, this lesion,

and modified by the antecedent constitutional tuberculosis, are the different pathological conditions to be kept in view in devising our remedies.

Now, the most advantage will be derived from the adoption of a system of treatment combining many of the resources above specified: calomel or gray powder, with quina and extract of conium; the application of a blister to one or other of the situations already indicated; leeches, which are occasionally required to relieve congestion, or, in some cases, scarification of the lids may be practised, as a very effectual mode of emptying the vessels; the application of nitrate of silver, and the use of the belladonna or hemlock fomentations, as before spoken of, are the means indicated by a just appreciation of the complex nature of the case. Now, in cases such as we are considering, every one is aware of the great difficulty of obtaining a satisfactory view of the eye, owing to the rigidly contracted state of the orbicularis palpebrarum, and instances are known of the ulcerated and weakened corneal structure having given way during rude attempts to overcome the action of the muscle; nevertheless, the object—which is certainly one of paramount importance—can be attained, I am happy to say, without great difficulty or danger, and for some years past I have been in the habit of resorting to the anæsthetic effects of chloroform for the purpose, and can recommend this agent as a most valuable expedient in all cases of intractable photophobia. Under its influence the orbicularis is relaxed, and the eye can be inspected in the most satisfactory manner; and, if necessary, a finely-pointed stick of nitrate of silver, or, which is preferable, a camel-hair brush, carrying a caustic solution of the salt, can be applied with perfect safety to the minutest ulcer. Moreover, I am satisfied that the chloroform exerts a beneficial influence on the disease, by diminishing pain and intolerance of light, and tranquillizing the patient[a]. As to the proposal of diminishing tension of the cornea by discharging the aqueous humour, and so anticipating, by artificial means, a result which the ulcerative process, if unchecked, is certain to accomplish, not having performed the operation, I can pronounce no opinion on its efficacy. In principle the practice appears sound, but, unless chloroform were employed, must be attended with much difficulty and hazard. As the effects of mercury on the

[a] This application of chloroform is not mentioned in any of the standard works on ophthalmic surgery, nor is it alluded to, so far as I am aware, in any of the recently published lectures or memoirs on the subject. Although I am satisfied that so obvious a use of this valuable agent cannot have escaped the notice of others, I believe I am the first to put it on record.

gums of young persons cannot be calculated upon as a test of its curative action, the medicine must generally be continued either until the disease yields, or the cornea is perforated. When this casualty occurs, the treatment has failed, and no further good can be expected from mercurials; these latter must also be immediately suspended should the cornea at any time show a tendency to slough; on the occurrence of this process, our chief reliance must be placed on bark. The question of the influence of light, in these acute cases, is easily disposed of: its effects are pernicious, because too powerful for the highly irritable and inflamed state of the organ, just upon the principle that irritants generally are injurious under states of active congestion: not that it should be altogether excluded, but the apartment ought to be kept moderately dark, and the eyes, moreover, protected by a shade; in fact, we should endeavour to moderate and adjust the stimulus to the altered sensibility of the organ, by admitting more or less light, just as the eye can tolerate its influence; the child will, consequently, be able to move about, gently exercise his vision, and subdue or resist that involuntary and almost spastic contraction of the orbicularis, which, when once confirmed, is so difficult to overcome.

It is a fortunate circumstance, considering the great frequency of strumous inflammation of the eye in these countries, that the resources of art, when promptly and judiciously employed, are generally adequate to avert the disastrous results which the disease, if unchecked in its acute stage, is almost certain to produce; nevertheless, the affection frequently continues, in a chronic or subdued form, for an indefinite period; in one class of cases, by far the most common, yielding occasionally, or remitting in its symptoms, perplexing both patient and practitioner by frequent relapses; or, in another and a rarer type, preserving a steady and unchangeable chronicity, not less remarkable than pertinacious, in which all action, whether healthy or unhealthy, appears suspended; ulcerations, if present, neither deepen nor fill up; the fasciculated vascularity is stationary, or but a few scattered vessels slowly extend themselves over the surface of the cornea. Now it is the former class of cases—the remitting—that so often affords the clearest demonstration of the influence the exalted sensibility of the nerves exerts upon the secondary objective phenomena. Diminution of photophobia is the surest precursory sign of a salutary change; its return or increase is a no less certain harbinger of evil. Immediately that the spasm of the lids, the

gush of tears, and sneezing upon exposure of the eye to light, cease, the reparative actions commence.

Few diseases more severely tax the ingenuity of the surgeon, or oftener exhaust the expedients of science in new and untried combinations, than chronic phlyctenular ophthalmia. Allusion has been already made to the efficacy of bark and quina; the other remedies deserving of notice are the various preparations of iron, and particularly the syrup of the iodide, the saccharated carbonate, and the citrate of iron with quina. The muriate of baryta is an alterative of much power; and cod-liver oil may be given in this, as in allied disorders, with the greatest benefit. When I prescribe the muriate of baryta, I usually combine it with the tincture of sesquichloride of iron, which I believe enhances the value of both medicines. The citrate of quina and iron is often advantageously given, with the tincture of henbane or conium. And here I may observe that, practically, a marked difference exists between the two varieties of chronic ophthalmia just referred to, and that in our selection of remedies we should be influenced by a diagnosis of the relapsing or remitting from the more steady or persistent type. Although, beyond doubt, patients will derive benefit from tonics and alteratives, however indiscriminately exhibited, still I am satisfied that the greatest amount of good will be obtained by paying attention to this point, and treating cases coming under the first division upon a purely tonic plan, reserving those medicines that are called alteratives for the other class of cases. It may further be noticed, that, in the remitting type, quina agrees best with the patient during the period that the symptoms assume characters of increased severity, either alone or combined with the extract of conium, and steel medicines in the intervals, when cod-liver oil also is most opportunely exhibited, the stomach being better able to retain and digest it than when the exacerbations are present, and the digestive organs likely to be in an irritable condition. But in the less frequent examples of the disease, when the symptoms are not observed to change so distinctly from time to time in their severity, but to pursue a course of greater steadiness and constancy, the bichloride of mercury, or the muriate of baryta,—the former dissolved in the compound tincture of bark, and the latter with the tincture of sesquichloride of iron,—are the combinations which, in my experience, are best deserving of trial.

This is the place to notice another remedy of great value, which I now frequently employ in certain intractable cases of

strumous ophthalmia, especially when complicated with chronic eruptions of the scalp, &c. The following case first suggested its employment:—

In the summer of 1853 I was consulted respecting a young lady of lymphatic temperament, fair complexion, and delicate skin, who had suffered, for several months previously, from a pustular affection of both eyes, attended with lachrymation and intolerance of light; the sclerotic conjunctiva was exclusively engaged. I regarded the case as one of those mixed forms, partly phlyctenular and partly pustular, which occasionally occur in practice, and treated it in the ordinary manner. For weeks, various preparations of bark, quina, iron, &c., were exhibited, but to no purpose; counter-irritation and different collyria were also employed, but the disease continued rebellious. The objective symptoms presented some peculiarities, which at first I was unable to account for, viz., the sero-pustules, which were most numerous around the margin of the cornea, were unusually small; they were, moreover, constantly occurring one after another, and disappearing with singular regularity; each passed through its stage of vascular red point, vesicle or sero-pustule, and minute ulcer, in the space of about ten days, so that the affection was prolonged by a constant renewal of fresh pustular spots and phlyctenulæ, that healed rapidly, and not, as in the ordinary cases of strumous ophthalmia, by the persistence and chronic progress of ulcerations originally produced. That the complaint was strumous I had little doubt: the swollen upper lip, and spongy appearance of the mucous membrane of the nose, confirmed me in this opinion; nevertheless, the case was new to me in many respects, and I remained perplexed and puzzled. At length my attention was caught by a red and scurfy appearance of the back of the neck, just where the hairs commence at the border of the scalp. This patch, I ascertained, was of long standing, and, the rest of the head being healthy, was considered so trifling as to be undeserving of notice; but I extended the examination further, and discovered a few unmistakable spots of impetigo on the arms and back. I now discovered the mistake I had committed; I was treating a case of cutaneous disease for one of ophthalmia. As the constitutional remedies already employed, under an erroneous impression as to the nature of the case, were, fortunately, precisely those which a more enlightened diagnosis would, at least in the first instance, have suggested, I determined at once to have recourse to arsenic, and prescribed the white oxide, in combination with iron and nitro-muriatic acid. At the end of a fortnight there was an

evident improvement; and in a month from the commencement of the new remedy the ophthalmic affection had completely disappeared; the red patch at the roots of the hairs was very obstinate, but ultimately yielded after the lapse of some weeks, during which it was found necessary occasionally to intermit the medicine. This case imparted a lesson too valuable to be easily forgotten, and I resolved to profit by it as soon as an opportunity offered. I had not long to wait. A strumous child, suffering from ophthalmia, and also the subject of impetigo of the scalp of long duration, presented himself. After I had given cod-liver oil, iron, iodine, quina, &c., a fair trial, and with little benefit, I directed the liquor arsenicalis, with tincture of bark. Very soon an amendment was quite perceptible, first in the eyes, and afterwards in the head affection. The remedy was continued at intervals until the cure was complete. I have since had several opportunities of testing the efficacy of arsenic in intractable cases of strumous ophthalmia, *where no affection of the skin existed*, and I believe it to be an invaluable remedial agent, when properly exhibited. It need not supersede other tonics of acknowledged efficacy, and may be advantageously combined with cod-liver oil, iron, or bark. The power of arsenic in controlling the progress of various lupoid ulcerations is undisputed, and the frequent connexion of these latter with the scrofulous diathesis is equally certain. It is rather singular that these facts should not sooner have suggested its administration as a tonic in other scrofulous disorders.

Although I regard ophthalmic hyperæsthesia in some of its varieties as the fundamental local lesion in all cases of scrofulous ophthalmia, nevertheless, it must not be forgotten, that during the progress of the disease in a chronic form, a period may arrive when the primary and secondary phenomena are to be viewed in a converse relation to each other; the nervous lesion may be maintained by the reactive agency of the diseased state of the cornea and conjunctiva; thus the complication comes to be more an object of treatment than the morbid state in which it originated—this doctrine involves no pathological anomaly—the same alteration of sequences is not unfrequently observed in the progress of other diseases. In this way only we can explain the satisfactory results of topical treatment in certain chronic cases. Local applications, therefore, come to be auxiliaries of much importance, and, of all collyria, solutions of nitrate of silver are the most generally useful, to which small quantities of wine of opium, tincture of belladonna, or tincture of conium, may often be advantageously

added when a sedative action is required; but the long-continued use of the nitrate is objectionable, from its well-known property of discolouring the conjunctiva, and therefore, solutions of other salts, as the sulphate and acetate of zinc, the bichloride of mercury, hydriodate of potash, &c., are occasionally preferable. Wine of opium is an application much used; it is too stimulating in its undiluted state, and should be mixed with equal quantities of laurel or distilled water; but as a remedy against intolerance of light few agents will bear a comparison with prussic acid; Scheele's preparation, reduced to half its strength by the addition of distilled water, or mixed with wine of opium, and dropped in the eye, will sometimes exert a really magical influence.

On the subject of counter-irritation I have little to add, further than to recommend a substance which is not very generally used for this purpose in ophthalmic surgery: I allude to iodine, a strong solution or tincture of which, applied to the outside of the upper lid[a], acts as an admirable counter-irritant. Caution, however, is requisite in its employment, to prevent its too energetic action, or any portion entering the palpebral fissure; it should be laid on carefully and *thinly* with a camel-hair brush, and by allowing time for two or three coats to dry in succession, a layer of sufficient thickness may be given to the thin integument. The application produces much pain, which continues for several minutes, and is often followed by some œdematous swelling; this, however, soon subsides, when the cuticle presents a shrivelled, dry, and yellowish appearance, but with the most marked amendment in all the symptoms, both subjective and objective.

Still, we must bear in mind the capricious character of scrofulous ophthalmia—apparent cures are too often but transitory intermissions, and a proclivity to the affection most commonly continues until the arrival of puberty, when the changes occurring in the organization at this period alter the balance of predisposition to diseased action in different structures, and the eye becomes less obnoxious to assaults. Can art establish the immunity which this crisis confers, or, as it were, anticipate the important radical changes incident upon it? I am inclined to think that the principle of establishing

[a] The application of this solution to the lower eyelid is useless, as the iodine is quickly washed away by the copious lachrymation. There is also some risk of the tears dissolving the iodine and flowing back on the surface of the eyeball: for obvious reasons the coating of the upper lid cannot be displaced in this manner. The following is the solution which I employ:—Iodine, 1 drachm; hydriodate of potash, 1 drachm; compound tincture of iodine, 1 ounce.—Dissolve.

artificial drains in scrofulous diseases generally is not always correctly apprehended—the depraved and unorganizable products of the constitutional disease, must find some local vent, or else invade the different organs and textures of the body—setons and issues eliminate the *materies morbi*, until the fundamental vice is extinguished by time, or yields to collateral agencies. They can never directly strike at the latent radical evil, but, acting as depurating channels, may prevent the deposition of heterologous products from the blood, until the establishment of the normal vital conditions of the system. Viewed in this light, setons are deserving of more general adoption in all strumous diseases; for myself I feel satisfied that in obstinate relapsing cases of phlyctenular ophthalmia, more especially those following upon or complicating chronic articular disease, when protracted suppurative action has diminished or ceased, setons may be employed with the greatest advantage, as well to avert mischief from vital organs as to preserve the integrity of the eye.

The beneficial influence of change of air in phlyctenular ophthalmia is universally acknowledged, but all practitioners may not be aware of the singular effects of a short sea-voyage in this disease. A few years ago a little boy, who had been a patient of mine for some time previously, crossed from Londonderry to Glasgow, to consult Dr. Mackenzie: he was ordered quina and a collyrium of sulphate of zinc; remedies which, although fairly tried, had already failed in my hands. The child returned in a few days, and surprising was the amendment that had taken place in so short a period; vascularity had greatly subsided; ulcers and specks, which resisted for weeks the action of the most varied applications, were half healed or scarcely perceptible; and a most inveterate photophobia had yielded, as it were, to some magic spell. I might be inclined to attribute the marked change in this instance to some accidental circumstance or coincidence in the course of this notoriously uncertain affection, but that I am aware of another case in which a precisely similar result occurred; I can, therefore, at least mention the expedient as one deserving of trial.

Although in the foregoing observations I have expressed my opinion as to the futility, or even imprudence, of forcing a child suffering from acute ophthalmic hyperæsthesia out of doors, with the view of overcoming the intolerance by exposure of the eyes to a strong light, I can speak with equal confidence, in chronic cases, of the absolute necessity of the practice. No agent possesses the same power, or exerts the

same restorative influence; its exclusion prolongs the affection almost indefinitely. But to obtain the good which this renovating stimulus is capable of exerting, the patient must not be compelled abruptly to "face the light," as is too commonly practised; on the contrary, he must be trained by slow degrees, but steadily and perseveringly, to resist the painful impression first produced, until the abnormal irritability of the retina or other nerves is exhausted or removed, a result greatly promoted by ventilation, exercise in the open air, and the other adjuvantia already noticed.

That form of hyperæsthesia which I have denominated "ciliary" is not, according to my experience, so commonly observed in connexion with strumous ophthalmia as with rheumatic and some other affections of the eyeball. I had, very lately, an opportunity of observing it as a sequela of arthritic iritis, and formerly had often occasion to witness an exquisitely painful affection of the ciliary nerves, attended with intolerance of light and other distressing symptoms, produced mechanically by the pressure of hard particles of the crystalline lens against the iris after keratonyxis,—an operation for cataract, at the time I was a student in Dublin, almost exclusively resorted to by one ophthalmic surgeon in the metropolis. My experience, however, of simple scrofulous ciliary hyperæsthesia is limited: a very chronic case under my care, after the failure of other remedies, yielded, apparently, to ten drops of liquor cinchonæ with two of Fowler's solution, given three times a day.

The substance of the foregoing observations may be briefly stated in the following propositions:—

That in all cases of phlyctenular or strumous ophthalmia there exists, of necessity, a special lesion of the nervous apparatus of vision.

That this lesion is the cause of photophobia and the other pathognomonic symptoms of the disease.

That it precedes, in most cases, the development of the inflammatory or objective phenomena; and that these phenomena are directly influenced by this condition, and but remotely by the constitutional disorder.

That the lesion in question is a state of hyperæsthesia, or exalted sensibility of certain nerves, viz., the optic and retina, and the ciliary and conjunctival branches of the ophthalmic of the fifth pair.

That the phenomena attendant upon photophobia—namely, contraction of the pupil, spasm of the orbicularis, sneezing, and lachrymation—are the results of reflex action, displayed in a morbid form under the influence of this lesion.

That inasmuch as the impression of light upon the retina is competent to excite closure of the eyelids as well as contraction of the pupil, as proved by the experiment of Magendie, already quoted, optic hyperæsthesia may be admitted to exist as an isolated pathological condition, capable of producing photophobia independently of other nerves.

That the symptoms of ophthalmic hyperæsthesia vary in intensity and character, according as the nerves referred to are separately or conjointly affected; and that physiological experiments, as well as pathological observations, sanction the division of the lesion into three forms.

That the first form (optic hyperæsthesia) is characterized by the impression of light producing a luminous or chromatic glare, attended with a peculiar and distressing, but not painful sensation in the eyes; and that its symptoms, subject to occasional intermissions, commonly precede for several days the appearance of inflammatory phenomena.

That the second or complicated variety of the lesion—that which engages all the nerves before mentioned—being quickly followed by the objective symptoms of strumous ophthalmia, can seldom be recognised for any length of time as a simple nervous affection, although invariably present in all unequivocal examples of the disease.

That ciliary hyperæsthesia (third form) is best distinguished from the other varieties by the neuralgic character of the pain, and that it more frequently follows than precedes the ophthalmic disease.

That a distinction should be made between the ordinary relapsing cases of strumous ophthalmia and those rarer examples of the disorder in which the symptoms pursue a course of greater certainty and steadiness, inasmuch as the therapeutical indications differ in the two varieties.

That in cases of phlyctenular ophthalmia attended with inveterate photophobia, where a satisfactory inspection of the eyeball is desirable or necessary, the anæsthetic influence of chloroform is the most suitable expedient.

That when scrofulous ophthalmia occurs in connexion with chronic articular, or such like diseases, and protracted suppurative action is on the decline or has ceased, much benefit may be expected from setons and issues as prophylactic remedies.

That arsenic is a most valuable agent in inveterate cases of this disease, more especially those complicated with chronic eruptions of the scalp or cutaneous surface generally.

Art. VI.—*Relation of a Case of Formation of a New Nose; with some Remarks.* By John Hamilton, Surgeon to the Richmond Hospital.

In England and Scotland, since the publication of Mr. Carpue's interesting work, several operations have been performed for the restoration of lost noses. But it is strange how little attention has been paid to the operation in Dublin, about five and twenty years having elapsed since its performance in this city. The result was, to a certain extent, not successful, and the appearance of the new nose very discouraging to other attempts. I recollect having seen it when a student. The woman was heartily ashamed of the new feature, and no wonder, as it was a small, round, snubby appendix, changing often in colour, sometimes bright red, at others of a livid white, alternating in appearance between a Kentish and a Whiteheart cherry; the temperature was also unequal. But when the operation is as successful as that I am about to relate, it is certainly a boon of the utmost importance and value to the poor patient. The nose has ever been considered a fair target for the shafts of wit; but the man who has no nose is not only disfigured and humiliated in his own estimation, but is sure of an amount of unfeeling ribaldry from many, and of being an object of repugnance to most people.

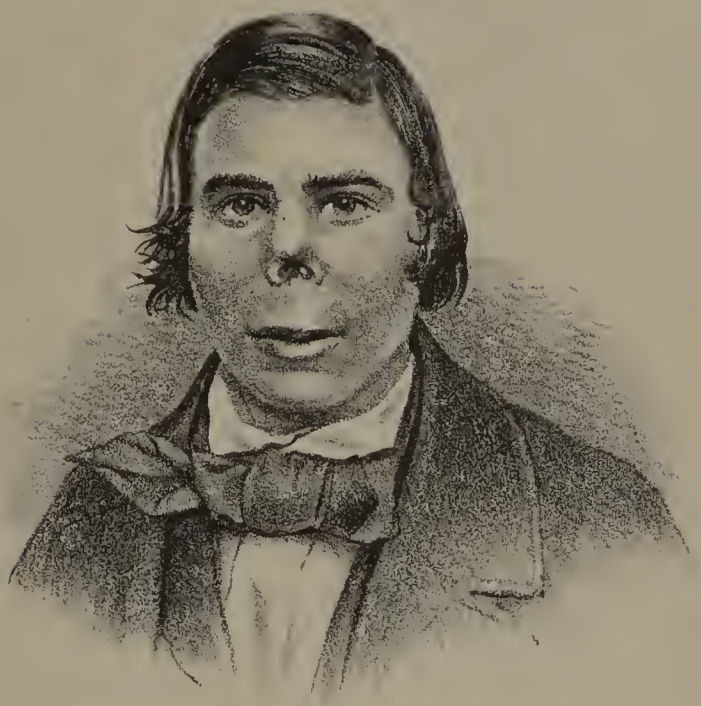
The dismemberment is rarely the result of violence. I have only met with one such case. About nine years ago a young man came to the hospital in a half-drunken state, with the end of the nose separated, and hanging on merely by a shred of skin. Almost immediately before I saw him, he had a quarrel with a comrade in a public-house, who seized him with his teeth by the nose, and, before he could disengage himself, nearly bit it off. There had been a great deal of bleeding. I readjusted it carefully, and secured it by a couple of sutures. Union took place throughout, and the marks of the accident were scarcely perceptible.

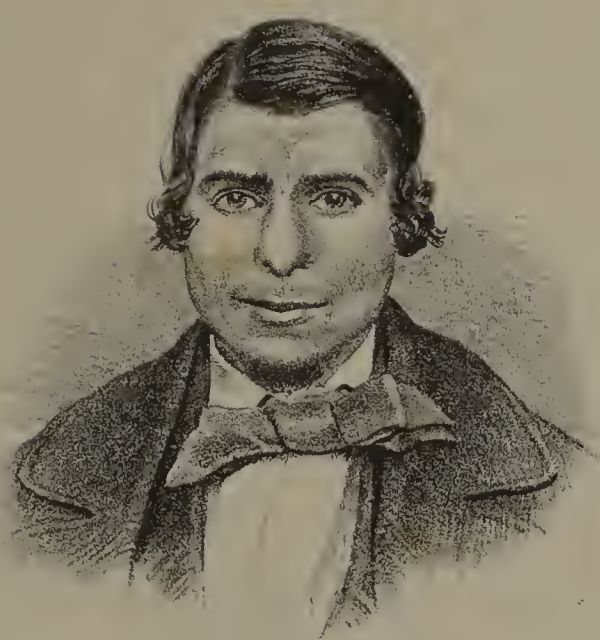
The most commonly received opinion among the public is, that the mutilation arises from the ravages of syphilis; it is the prevailing belief now, and was so more than a hundred years ago. In an amusing paper on the Taliacotian operation in the Tatler, December 7, 1710, the frequent loss of noses is accounted for by the following fable:—"Mars, the god of war, having served during the siege of Naples in the shape of a French colonel, received a visit one night from Venus, the goddess of love, who had always been his professed mistress and admirer. The result was a little Cupid. This boy, whether it was by

reason of any bad food that his father had eaten during the siege, or any particular malignity in the stars that reigned at his nativity, came into the world with a very sickly look, and crazy constitution. As soon as he was able to handle his bow, he made discoveries of a most perverse disposition. He dipped all his arrows in poison that rotted everything they touched; and, what was more particular, aimed all his shafts at the nose, quite contrary to the practice of his elder brothers, who had made a human heart their butt in all countries and ages. To break him off this roguish trick, his parents put him to school to Mercury, who did all he could to hinder him from demolishing the noses of mankind; but in spite of education, the boy continued very unlucky; and though his malice was a little softened by good instruction, he would frequently let fly an envenomed arrow, and wound his votaries oftener in the nose than in the heart."

A more practical age rejects the fable, but preserves the opinion as strong now as then, that the most frequent destroyer of the nose is syphilis. Yet no belief can be more unfounded. The strumo-syphilitic disease of the nose is in the bones and their lining membrane, and though it has its "broken arch, its ruined wall, and portals foul," the integument is rarely engaged; yet, even so, a sufficiently hideous and very characteristic feature remains, flat, with a transverse sharp depression across its centre, distorted, and with contracted and misshapen nostrils.

In the majority of instances, where we are called on to make a substitute for a lost nose in this country, the destroying agent has been lupus. This disease is sufficiently common among the scrofulous poor, and while judicious treatment can do much to arrest its course, by ignorance or carelessness more or less of the organ is infallibly lost: first the alæ, then the cartilaginous septum, then the remaining fleshy portions fall away before the destructive ulceration. I have now a case where the tip of the nose has been eaten away, with a portion only of the alæ; the remains of these have curled in on each side, and helped to close the nostrils: the deformity in such a case is rather less, but bad enough, and I am only waiting till a small extent of ulceration in the septum shall be healed, to operate. When, as in the instance which follows, the whole of the soft parts are destroyed, and nothing but the bony structures of the nose covered by skin are left, with a gaping chasm laying open the interior of the nasal cavity, the disfigurement is very repulsive. The aspect has been accurately likened to that of a skull, and is well exhibited in the drawing of my patient previous to the operation.





Forster & Co Lith. Dublin.

A young man, of the name of John Ferguson, came to the hospital with the greater part of the nose destroyed by lupus, at least an inch of the extremity of the organ having been ulcerated away, and the diseased action still going on in the septum. By the local use of the solid nitrate of silver, and the constitutional effects of the hydriodate of potash and sarsaparilla, the ulceration completely healed, and that red scurfy eruption, so constant an attendant on lupus of the nose, was removed from the adjacent parts of the face. To prevent any relapse, the treatment was persevered in for many weeks; and as the remains of the mutilated organ offered some encouragement for the attempt, I began to consider whether I could not by a new nose remove the unsightly appearance which presented itself in this case, as it does in other similar ones, giving the face, as I have already said, the aspect of a skull.

The sides of the remains of the nostrils presented sufficiently fleshy edges, and were pretty even, but the septum was a good deal eaten away, so as to offer no central support; the portion of the bridge of the nose which remained was too prominent; but still the parts were not in such an unfavourable condition as to prevent a satisfactory result from the Taliacotian operation being hoped for. The operation I preferred was the Indian method of taking a portion of integument from the forehead. The case was favourable for this, as the forehead was high enough, the integument thick, and the base of the nose between the eyebrows broad.

The first time fixed for operation the chloroform caused such excessive vomiting that I thought it best to defer it to another opportunity. On the second occasion there was the same trouble, as, after he had become insensible, and I had pared the edges of the nostrils, he commenced vomiting again; but this time I did not desist, but went on and completed as rapidly as I could all the cutting part of the operation. The steps of the operation were as follows:—I first made a deep incision, about half an inch from the edge, all down the sides of the nostrils, and dissected off the part between this and the rim. A broad border of raw surface was thus obtained on each side. I next made a short straight cut down the centre of the nose, about half an inch from the projecting tip, and then dissected away the angles, and this made a larger bare surface at the top than elsewhere, so as to leave sufficient space for the raw surface of the transplanted portion of skin to adhere and fix itself. I had previously marked out on the forehead, with a piece of nitrate of silver, the size and form of the flap for the new nose. This was isolated by an incision down to the pe-

riosteum, the incision being carried on each side of the root of the nose to below the eyebrows, forming a neck about half an inch wide. By twisting this I turned the raw surface of the flap over, and brought it in contact with that at the tip and sides of the nose, when I found the measurement had been so just that it fitted accurately. The shape of the flap approached that of an ace of clubs, and when brought down and applied, the small projecting handle was in the situation of the septum, but not sufficient to form one.

The bleeding was very copious, both from the pared edges of the nostrils and those of the wound in the forehead, particularly the latter. I waited till it had entirely ceased, and then the flap was brought down from the forehead and carefully applied over the pared surface of the ramus of the nose. They were kept accurately in contact by a few points of suture, two on the right side, three on the left, the last being the side to which the twist of the root of the flap was made. The whole fitted well. The open wound in the forehead was closed at its lower part by sutures, the remainder filled with lint smeared with simple dressing. A little lint and simple dressing were put over the nose.

Saturday, November 29th (fourth day), the dressings were removed: everything looked well; the flap constituting the new nose was warm, and of a good colour, and the edges adherent. Lint dipped in spirit lotion covered with oiled silk was applied.

December 2nd (seventh day), I removed the ligatures everywhere; they had, in fact, begun to eat their way out—the whole edge appeared united, that on the right side presenting a perfect amalgamation of surface, so that the line of union was indistinct: the new nose quite warm and sensitive. I did not take the lint from the forehead wound till some days after; it was healthy and granulating.

At the end of the fifth week everything was most satisfactory, all in perfect union throughout, and the nose presented a most respectable appearance, though rather flat; at first it was too white, but it has now got a better colour, and is warm and sensitive. Were it even left as it is, an immense improvement in his personal appearance would have been effected by the operation. The large wound in the forehead has contracted to a small granular sore, little larger than a shilling.

January 13th (the seventh week), circulation being fully established in the new nose, I thought it time to make a septum. The usual proceeding has been, before this part of the operation, to divide the narrow slip at the root of the nose,

where the twist had been made in turning down the flap—it appeared to me better to reserve this for the last, as I should thus have the benefit of whatever circulation was carried on at this part, in bringing about the union of the septum to the place where it was to be inserted. I altered somewhat the operation of making the septum from the upper lip. The general plan has been to make two incisions in the centre, leaving a narrow, straight slip between them: the incisions are carried quite through the prolabium. This slip connected only at the upper point has the prolabium removed from the tip, and is brought up and fixed by ligature or needle to the surface prepared for it on the inside of the end of the new nose. As the lip in this man was unusually long, I thought it unnecessary to carry the incision through the prolabium; but instead of this, I merely cut a triangular piece sufficiently large, the base adherent above, the apex loose below: the point of this last was squared, turned up, and brought in contact with the pared end of the small projection of the new nose, and secured in this position by a single point of suture: union by the first intention took place. After removal of the ligature on the third day I perceived that the nostrils were contracting; this was readily arrested by the insertion of two small conical plugs of lint smeared with ointment, which, as he was a handy fellow, he managed very well himself.

In the eleventh week, the septum being firm, and the sides of the nostrils skinned over, I divided the narrow band at the root of the nose; the end was cut wedge-shaped, and inserted into a deep incision between the eyebrows, and fixed there by a transverse needle; it fortunately united at once.

The drawings Nos. 2 and 3, front and side views, will best show the form of the new nose, which is perfectly satisfactory to the man and to myself. If the engravings in Carpue's work are referred to, the same tendency to the hook-nosed form will be seen. It appears to arise chiefly from the thick integument that forms the new nose being placed over the bridge of the old one, so as considerably to increase its height, and also from the tip being drawn back by the contraction of the new septum. Although not so faultless as a Grecian, it is certainly better than a pug nose; something, moreover, may be said in favour of this hooked or Roman nose, as that which has been regarded as the type of the warrior, from William the Conqueror down to our own immortal Duke; besides, we cease to be particular when we reflect that it is here a question of nose or no nose; and the present, though not perfect, is still

fleshy, firm, sensitive, and warm; he can breathe, blow, and sneeze with it; and the best proof in its favour is, that it pleases those who ought to be the best judges of what a manly nose should be, for since he left the hospital he has got a wife by it.

Art. VII. — *Observations on the Practice of "Écrasement Linéaire" in the Parisian Hospitals by M. Chassaignac; and an Incidental Notice of the Views of that Surgeon on the Employment of Chloroform.* By K. I. O'Doherty, F.R.C.S.I.

The student of surgery will find an attendance at the clinique of M. Chassaignac more attractive than at that of perhaps any other surgeon in Paris. Apart from the varied range of disease he will find there at all times open to his investigation, he will be gratified to meet in M. Chassaignac himself a combination of the highest professional attainments, with a demeanour towards foreigners, especially British or Irish, characterized by the utmost friendliness and attention; and, moreover, a familiarity, the most intimate with the details of British surgery[a].

He may fairly be ranked at the head of the "experimental," or perhaps, to speak more correctly, the "innovating" school of operative surgeons of that city.

A profound anatomist and skilful surgeon, he would seem to have availed himself of the discovery of chloroform to give full bent to his inventive genius, in devising novel improvements in the surgical treatment of disease. This zeal for improvement, for which his magnificent wards in the "Hôpital Lariboissière" afford him an unlimited field, is indulged in with an amount of daring, of *sang-froid*, well calculated to interest, if not amaze, those accustomed to the praiseworthy caution with which Irish hospital surgeons undertake surgical operations.

Prior to directing attention to the most important of his novelties—his method of operation by "Linéair Écrasement" —I am induced to offer some observations on the results of his investigations into the action of chloroform, and on the principles he lays down for its administration. I do so chiefly because he tells us that the employment of his écraseur must be at all times subservient to the use of this agent; and likewise because of the very great importance of the principles he attempts to establish, which, if true, would enable the surgeon to avail himself of this agent without risk to his patient's life

[a] He has published a French translation of Sir Astley Cooper's works.

or his own reputation. Practitioners who use chloroform he distinguishes into two classes. The larger, or more timid, generally undertake their operations whilst the patient is yet conscious, content if, on pinching the integument, they find his sensibility somewhat benumbed. This mode of administration he condemns as worse than useless, because, in addition to being inefficient in relieving pain, it complicates the operation by acting as an excitant to the nervous and circulating systems. The other class, of a more daring type, push the administration until the full effect is produced, and occasionally only discover they have carried it too far by finding their patient in a condition of fatal coma. Now he insists that there is a happy medium between these two extremes, which is at all times attainable by the surgeon, if attention be paid to the rules he lays down.

The effects of chloroform he divides into three stages :— 1st. That of Excitement. 2nd. That of Tolerance. 3rd. That of Collapse.

Each of these stages is marked by a train of well-defined symptoms, and they merge one into the other in the order here stated.

The surgeon, he states, should never operate unless in the stage of Tolerance.

When the chloroform is carefully administered, this latter will generally follow immediately upon the primary or excited condition. It will be at once recognised by the patient being unconscious, by his respiration being calm and composed—the heart's action normal in rhythm, and the pulse firm and regular in its beat, and it will be attended with complete loss of sensibility and muscular control. The patient, in fact, will be like one in a calm, profound sleep—if his limbs be raised, they will fall back like logs on the bed, and his countenance will generally exhibit a smiling aspect. The advantages of this very satisfactory condition M. Chassaignac states, and with great truth, are not confined to the patient. As the result of his very great experience, he affirms, that whilst in this Tolerant stage, no possible danger need be apprehended by the surgeon, who may, with confidence, devote himself to his operation—a matter of no slight moment, when we reflect that usually the surgeon's attention is quite as much directed to the effects of the anæsthetic agent as to the more immediate, and, it may be, embarrassing, work he has in hand.

M. Chassaignac only permits his most trusted assistants to administer the chloroform. His directions to them are, to place the patient on his back ; to remove all covering from the

neck; to leave uncovered a sufficient portion of the chest to enable him to watch the respiratory movements; and finally to leave the pit of the stomach also exposed, as there the action of the heart, if troubled, will be most readily perceived. Having thus prepared the patient, the administration of the chloroform is proceeded with, the assistant being cautioned to devote his attention altogether to his task: he will keep his eye on the patient's features; on the motions of his chest; on his stomach—all which he is in a position to do without difficulty. In favourable circumstances he will notice in two or three minutes symptoms of the stage of excitement. The patient will probably commence talking in a rambling and disconnected manner; will possibly sing snatches of songs; his respiration will be quickened; his pulse will also increase in rapidity. As this stage progresses, spasmodic action of the voluntary muscles will take place, sometimes of so powerful a kind as to require three or four strong men to keep the limbs within bounds. This condition having lasted for a period more or less prolonged, according to the patient's powers of resistance, the second stage—that of *tolerance*—will gradually ensue. The muscles will cease to contract, and the limbs will fall back completely powerless and relaxed; the patient will cease to give utterance to his feelings, and will quietly fall into an apparently profound slumber; his breathing will become calm; the heart's action, from being excited, will be normal; the head and face will be free from all turgidity on the one hand, or abnormal paleness on the other, and his sense of feeling will have altogether disappeared. Now the period when danger is to be apprehended, M. Chassaignac states, is just when this stage is being developed. In unfavourable cases, or those in which the agent is being too rapidly administered, in lieu of this very satisfactory condition of tolerance we shall find a most alarming train of symptoms set in: the respiration will become laboured and irregular, and possibly stertorous; the heart's action will intermit; and the patient's features will either contract rapidly—exhibiting symptoms of collapse, the face being at the same time overshadowed with a deadly paleness—or it will become turgid and suffused; and if, under these circumstances, the agent be still administered, fatal coma will rapidly set in. Such is the condition to which he has given the very appropriate title of anæsthetic collapse—*the third stage.*

He affirms that the surgeon need never apprehend the advent of this stage if the assistant be advised to take warning by the plain signs it will always give of its approach. If,

keeping his eye steadily on the three points previously named, he should perceive any evidence of it in the features, respiration, or circulation, he should at once remove the chloroform and allow the system to recover. He declares that it is of the utmost consequence to pay the closest attention to this point. Of such moment, indeed, that I have repeatedly heard him express his belief that so short a delay as that of ten seconds in removing it, after symptoms of intolerance have been manifested, will be attended with imminent risk to the patient's life.

In all cases, by removing the chloroform as thus recommended, the bad symptoms will speedily subside, and the assistant, having allowed a minute or two to elapse, may again administer it, still, of course, keeping his eye on the three sign-posts of danger. It will occasionally happen that the administration will require to be thus interrupted three or four times, but in all cases we shall ultimately triumph by inducing the condition of tolerance.

The apparatus employed by him is the simple one in ordinary use, viz., a fold of calico half a foot square, one end of which is "gathered," and a ligature fastened round it—within the hollow thus made a piece of sponge saturated with chloroform is placed. The assistant, holding the end enclosing the sponge in his left hand, places it over the patient's nose on a plane above the nostrils, whilst, with his right hand, he holds the free end as a veil over the lower portion of the face.

M. Chassaignac states that it was in the year 1850 he first conceived the idea of introducing the operation by "Écrasement Linéaire." Aided by M. Mathieu, the skilful surgical mechanist, he succeeded in giving practical effect to his idea by means of the instrument which has become familiar under the title of "Écraseur." I shall not occupy time by describing this instrument, as I have little doubt my readers are already well acquainted with it. I may state, however, that several attempts have been made to improve upon it: amongst the rest M. Charriére has produced one supposed by many to be preferable to M. Mathieu's. Such is not the opinion of M. Chassaignac himself, and in some experiments instituted by him, at which I had the advantage of being present, he clearly demonstrated the superiority of the original instrument.

In his Memoir[a] he advises all who purpose trying his form of operation, before using any of these écraseurs, to ascertain that the chain accurately fits the hollow leg of the handle

[a] Memoire sur l'Écrasement Linéaire. Paris: 1856.

through which it is to be pulled in the process of removing or dividing parts. Unless it be found to do so *most accurately*, instead of effecting a clean section of them, it will drag the last portion, probably integument, into the leg of the instrument, thereby most disagreeably complicating the operation, and necessitating recourse to the bistoury to accomplish the section of the retracted portion. Again he cautions us to test the power of the chain. This he does by placing within its loop some tough substance which it cannot crush. He then exerts all his strength in endeavouring to effect this, and by the manner in which it bears this severe strain he determines whether it be fit or not for use.

The écraseur is not applicable to the removal of tumours in which bone exists, or fibrous structure to any considerable amount. As the result of a series of experiments, he found that tendinous structures will be compressed, but not divided, by it, unless an amount of force be exercised which no instrument as yet manufactured for the purpose will bear.

The advantage which M. Chassaignac claims for his form of operation over all others in the removal of tumours is, that it combines to the safety from hemorrhage of the ordinary operation by ligature, the rapidity of the bistoury in its action of separating the parts. But few tumours will need a longer period than from ten to fifteen minutes to be removed, which, as he truly states, contrasts most favourably with the tedious action of the ligature, extending as it does over a space of from four to seven days.

On the other hand, the advantage it possesses over the knife, in being attended with little or no hemorrhage whilst dividing or removing vascular structures, is self-evident.

A remarkable proof of its efficacy in this respect is adduced in the account given in his Memoir of a series of experiments on arteries, in which he found that the coats of these vessels became so completely blended together in the process of section by the écraseur, that no exertion of the lungs, by blowing into the vessels behind their divided extremity, could force a passage for the air through them. Its power of removing vascular parts without hemorrhage will be influenced by two circumstances—

1st. The vascularity of the parts to be divided.

2nd. The time employed in the operation.

The latter should, of course, be regulated by the former. The rule acted upon by M. Chassaignac is to allow, in the case of ordinarily vascular tumours, an interval of fifteen seconds to elapse between each movement of tightening, in

other words, between each "clicking" sound of the instrument, which indicates, to use a nautical expression, so much "paying in" of the chain. When he is removing portions of the tongue, or other parts equally vascular, he allows a very much longer interval to elapse. It is of some importance that this should be well understood, as I have witnessed instances in which surgeons cutting through vascular structures, almost as rapidly as the instrument would permit them, wondered at seeing a severe hemorrhage resulting. The fifteen or twenty seconds' interval will make a vast difference in the result, rendering what—without this precaution, would be almost as sanguinary an affair as if the knife had been in requisition—generally a perfectly bloodless one.

M. Chassaignac has employed his écraseur in the removal of an immense variety of tumours. He has already given, in the Memoir I have before referred to, an account of a large number of them. I shall not attempt following him there, but shall content myself by referring to some few special forms of disease, for removing which it is in my judgment most suitable. I shall of course speak of none but those in which I have seen it repeatedly employed with the best results.

Tumours in the Anal Region.—It will be readily conceived, from the very vascular nature of the tumours met with in this region, especially hemorrhoidal, that this instrument would be particularly adapted to removing them, and such is the case. Indeed, so well has its character been established in this respect in the opinion of the Parisian public, that, during my attendance at his clinique, he was never without a retinue of applicants eager to be relieved through its means; and no wonder, for I cannot conceive greater triumphs of surgery than I have been a witness to its effecting in some cases of the more distressing forms of hemorrhoidal tumour.

These were cases of aggravated internal piles, characterized by their extent of growth; the excessive pain caused by them; constant hæmorrhage; and were attended with the usual concomitants of general as well as local irritability.

The treatment of such cases, familiar to the practice of most surgeons, I believe I am correct in saying is frequently attended with much difficulty and embarrassment. Should their removal be effected by ligature, as recommended by the English surgeons, a second or third application, according to Copeland, will be necessary before the entire mass can be extirpated. I need not particularize all the annoyances to both surgeon and patient, arising out of this tedious form of procedure. Its very painful nature, too, especially in those cases

complicated (and how few of them are not) with more or less inflammation and excessive tenderness, renders it so unpleasant as to have compelled Sir A. Cooper to give it up for a time in favour of the less painful though more dangerous operation of excision. Such cases prove equally unsuitable to the various other remedial means which have been devised. The actual cautery, the favourite remedy of the French surgeons, never can come into repute in this country. And Curling states that the application of nitric acid, as recommended by Houston, which he considers the most efficient method of treatment in the general run of hemorrhoidal cases, will yet be inefficient in those worst forms I am at present considering. I need scarcely speak of excision by knife or scissors, as I believe all surgeons at present agree in condeming it in such cases. Now it is precisely in such that the "écraseur," in my judgment, will be found a most valuable aid to the surgeon. Assuredly in several cases of the kind, in which I witnessed its employment, the effects were all that could be desired. The tumefied mass, as large in some of them as the closed hand, and growing from the entire circle of the rectum, was removed without any hemorrhage, without the patient being conscious of the removal—without, in fine, any single disagreeable complication either during or after the operation.

A very important feature also in favour of the 'écraseur' in these cases is, that it can with safety be employed, although the tumour and parts surrounding it be more or less inflamed. On this point I am induced to quote from M. Chassaignac himself. In the Appendix to his Memoir, p. 471, after recounting the history of a remarkable case of this kind in which he operated, he states: "Notwithstanding a subacute inflammatory condition of the tumour, with even some gangrenous points on its surface, I did not fear to operate immediately after the patient's admission into hospital, so urgent did it seem to me to get rid of the hemorrhoidal affection. It is not the first time I have thus operated in the midst of an inflammatory condition of the tumour. I have always done so with success." And he goes on to say, "if we recall to mind the numerous instances in which the tonsils are removed in a similarly inflamed state, we may well doubt the universal application of the therapeutic rule, in virtue of which we should await the disappearance of the inflammatory state before undertaking the removal of diseased parts."

Before employing the écraseur in the removal of hemorrhoids, M. Chassaignac impresses the necessity of having the patient completely under the influence of chloroform. Indeed

he admits that without this the successful performance of the operation would be impossible. No human being, however courageous, could endure the pain attending it without more or less writhing and contortion, which would be fatal to the success of the operation.

Having accomplished this essential preliminary, he proceeds in the following manner:—Gently turning the patient upon his left side, and flexing the right leg upon the thigh, and the thigh on the pelvis, he brings the parts fully within his command. He first passes into the rectum his "Érigne," having the hooks sheathed, introducing it sufficiently deep to be certain of grappling the entire tumour, he unsheathes it and draws it forcibly out, of course carrying with it the hemorrhoidal mass. He then includes the entire within a firm twine ligature, and round the track of this latter he places the chain of the écraseur, which he proceeds to shorten until it constricts the tumour. At this period he desires an assistant to note the time, and to make a sign to him as every fifteen seconds elapse —on every such sign he tightens the chain until the click is heard. As a general rule, the tumour will be separated in a space of time varying from ten to twenty minutes, leaving an almost bloodless surface, on which the track of the wound will be scarcely discernible. The after-treatment consists in graduated pressure retained firmly against the anal opening by means of the usual perineal bandage; the patient is removed quietly to bed. Of course precautions are taken before operating to have the bowels cleared, and in such a condition that a motion will not take place for seventy-two hours after. M. Chassaignac considers it of much importance to secure this, and with that view gives strict injunctions respecting the patient's dietary, confining him to food of the simplest kind, and especially interdicting vegetables, or anything calculated to generate intestinal gases, &c.

In one of his earlier operations he found, from not having adopted proper precautions, that the wounded surfaces of the intestine became partially adherent in the process of healing, thereby most disagreeably complicating the operation by a partial stricture of the rectum. This accident he now always prevents by the following method, which I quote from the Appendix to his Memoir:—

"On the day following the operation I introduce a catheter into the intestine with much gentleness. I renew this manœuvre the two following days, after which I daily introduce an elastic bougie, each of larger caliber than the preceding one, taking care to have them well greased before introducing them."

The wound will heal by granulation, and M. Chassaignac affirms, and certainly, as far as I could judge, with perfect truth, that the amount of suppurative inflammation will be comparatively very slight. In favourable cases it will be healed in a fortnight.

Rectal, Uterine, and Nasal Polypi.—The employment of the écraseur in these forms of tumour needs no remarks from me, as it is evident how admirably it is adapted to the operation of removing them. I shall, therefore, simply state that in numerous cases of one or other of them, in which I saw it used, the result was everything which the surgeon could desire.

Anal Fistula.—Next to the class of hemorrhoidal tumours, I should be inclined to place this affection as "fit and proper" for this instrument. In the operation for fistula it in truth fulfils every indication that could be wished. In all the cases in which I saw M. Chassaignac use it, the section of the parts was effected without any hemorrhage whatever, and the wound inflicted by it was precisely of that description most desirable in these cases; the amount of contusion of the parts necessarily caused preventing the possibility of the wound healing in any other way than from the bottom; and the comparatively small amount of suppuration, which M. Chassaignac claims as one of the results most characteristic of the action of the écraseur, will be found of no slight importance in the cases of debilitated and broken-down patients ordinarily afflicted with this complaint.

I remarked him operating with it in one or two cases of this disease in which he seemed to think it very questionable if any other form of operation would have been available for the patients' relief. They were cases in which, combined with general debility and marasmus, there was an exaggerated amount of local disease. The anal region was permeated, in various directions, with fistulous sinuses, and the constitution of the patient, where it had not developed organic disease, was yet so broken as to be unable to make a vigorous effort to set up healthy action. In these cases he stated that the ordinary operation, by bistoury, would be hardly available. The low state of vitality of the parts; the extent of the wounds required in laying open the sinuses; the amount of hemorrhage that would result; finally, the severe suppuration, would all speak trumpet-tongued in favour of the écraseur.

In employing it in such cases, a somewhat different mode of proceeding is required than for removing tumours. In M. Chassaignac's words:—"The *Écrasement Linéaire*, applied to fistula in ano, comprehends two operations,—the one prepara-

tory, the other definitive. The one has for its object to establish a conductor for the chain of the instrument round the part to be divided, the other is the act of division."

He first passes a very flexible bougie through the fistulous canal, and, by means of his forefinger introduced within the rectum, conveys it out through the anus. If the sinus be large enough to permit the chain to follow the bougie, he attaches it at once to the end of the latter, and is thus enabled to finish the operation at the one sitting. Generally, however, it will be necessary to expand the fistula somewhat before the chain can be got through, and this he accomplishes by passing, at the first sitting, a piece of flexible gum-elastic tubing—such as he employs in his novel method of "surgical drainage"—through it. He leaves it there for a day or two, and always finds that it has the effect of expanding the sinus sufficiently to enable the chain to be passed. From my observation of its effects in a number of cases in which I was fortunate enough to witness its employment, I can most fully endorse the following remarks, with which M. Chassaignac concludes the section of his Memoir treating of this affection:—

"By the écraseur we can cure fistula in ano with more certainty, and much less danger, than by any other means yet devised.

"A complete absence of the usual accidents, the excellent nature of the wound, the simplicity of the ulterior treatment, the very slight amount of suppuration, and the more rapid cicatrization than results from the use of a sharp instrument,—such are the advantages of the écraseur in this disease."

Congenital Phymosis.—In no cases will the peculiar advantages of this instrument, as an "anti-hemorrhagic," be rendered more striking than in those of circumcision. I have seen it used in many such, and can most fully bear out M. Chassaignac where he terms it an absolutely bloodless operation. Notwithstanding, however, this very desirable feature of its action in these cases, I imagine it will not be likely to supersede the scientific operation of M. Ricord. Were we to form a judgment of the two methods by the results attending their immediate performance, everything would be in favour of the écraseur: bloodless, in the most absolute sense of the word, and comparatively painless, the removal of the prepuce by the écraseur would seem to be the triumph of surgery; in this respect, no doubt, contrasting most strikingly with the bistoury, the operation with which is both exquisitely painful and sufficiently bloody. It is, however, when both wounds

are in the process of healing that M. Ricord's operation will be found to be the real "triumph." This is at once evident from the fact, that in the one case no provision can be made for the accurate adaptation of the edges of the wound to each other, a point of the greatest importance to the ultimate comfort of the patient, and for which provision is made, with almost mathematical precision, by M. Ricord.

It is but right, however, to say, that M. Chassaignac does not apprehend any ultimate inconvenience to the patient from his operation; and certainly, up to the period of their leaving hospital, there was no evidence of any disagreeable result in those cases in which I saw him use it. His *modus operandi* consists in introducing within the contracted orifice of the prepuce his "Érigne," sheathed. On pushing it fairly in, he unsheathes it, and, drawing it towards him, he effectually draws with it the whole circle of the prepuce entangled in its hooks; he then fixes on the chain of the écraseur in the usual manner, having previously isolated the portion to be removed by a ligature. The after-treatment consists in simply dusting the parts frequently with flour, and applying, in the process of healing, a solution of nitrate of silver to the wounded surface daily.

Operations on the Scrotum and Testicle.—M. Chassaignac claims a very high character for the écraseur in the operation for the radical cure of varicocele. I should imagine, however, that most surgeons would dread the effect of so extensive a wound as he inflicts in those cases. I witnessed two operations of the kind, and certainly felt no slight alarm for the patient's safety when I saw the huge gap left in the scrotum on the removal of the instrument, carrying with it, in each case, a slice of over an inch in length, by half an inch in width, of the varicose vessels, with the surrounding tissues and integument. In both cases, however, fortunately for the patients, M. Chassaignac's prediction as to the benignity of the wound proved correct: they healed rapidly by granulation, and the radical cure of the disease seemed certainly complete. The operation consists in first carefully isolating the varicose mass from the cord and spermatic vessels, which latter he keeps with his left hand securely out of the reach of his operative manœuvres; then passing three spear-pointed pins, as in M. Vidal's operation, he encircles the mass included within the three by a ligature, over which he passes the chain of the écraseur, and removes the whole in the usual manner. He directs the pins to be passed through at somewhat less than a

finger's-breadth from one another, taking care that the lowest of them will pass through on a plane above the vaginal sac.

He always endeavours, by bringing the lips of the wound together, and retaining them by interrupted sutures, to procure adhesion by the first intention; and states that he succeeded in accomplishing this in a case the particulars of which he laid before the Academy of Medicine[a]. Generally, however, owing to the contused nature of the wound, this attempt will not succeed.

He tells us in his Memoir that he has repeatedly removed the entire testicle with perfect success. As I had not an opportunity of seeing him use it in a case of the kind, I can but refer to the interesting examples reported by him.

Operations on the Tongue.—I regret that my opportunities of witnessing its effects, in the removal of the whole or part of the tongue, were not sufficient to qualify me to form a judgment on the disputed question, as to whether it affords the surgeon in these cases a complete safeguard against hemorrhage. I saw but one case of partial amputation of this organ effected by the écraseur, and must confess that in it the results were not such as to make me enthusiastic in its favour, the most that could be said for it being, that the application of a ligature was not needed; the hemorrhage, however, was very obstinate, and was only checked, after some hours, by repeated applications of ice.

The case was not, however, one from which it would be fair to condemn the instrument, inasmuch as M. Chassaignac admitted he had effected the section in a very much shorter time than was usual with him. He added, that in the previous operations he had performed on this organ, he allowed a couple of hours to elapse (on this occasion he only allowed a few minutes) between each motion of tightening the chain, so that the section was only completed the day following that upon which the constriction had been commenced; and he stated that in these cases there was no hemorrhage worth naming. If we are to give credit to the remark with which, on reference to my notes, I find he concluded his comments on this case, to the effect that in no one of the numerous partial and complete amputations of the tongue which he had performed with the écraseur, had he occasion to apply a single ligature to a bleeding vessel, we are forced to the conclusion that the advantages possessed by it over the ordinary ligature, in effecting the sec-

[a] Bulletin de l'Académie de Médecine, tom. xx. p. 561.

tion in one day instead of seven or eight, renders it the most efficient instrument as yet devised for these cases.

I cannot, perhaps, better conclude my remarks on this "novelty" of M. Chassaignac's than by quoting, from the Appendix to his Memoir, a *resumè* of its results in eighty-four cases operated on by him.

1st. The inflammation which follows operations by the écraseur is much less than that observed after operations by the bistoury.

2nd. Suppuration is diminished to an enormous degree; so much so that, after the operation for fistula, or the removal of hemorrhoids, there is no need for dressing after the first two or three days. A little flour dredged on the wound will be enough.

3rd. The slight traumatic inflammation and little suppuration explain the rapid cicatrization which follows the écraseur.

4th. One of its most remarkable properties is that of being unattended with purulent infiltrations in the neighbouring parts, which so frequently follow operations with the knife.

5th. The pain attending and following it is much less than that following the bistoury.

6th. All hemorrhage, whether primary or secondary, is prevented in a certain manner.

7th. Not a single instance of nervous delirium, or of tetanus, has followed its employment.

8th. If it does not wholly prevent purulent absorption, it certainly diminishes the chances of this accident exceedingly, since, out of the eighty-four cases observed, on one occasion only was there any evidence of it having occurred, and this was in the midst of exceptional circumstances, which deprived the operation of its most essential qualities.

9th. Complete absence of the occasional accidents of ordinary wounds, such as erysipelas, hospital gangrene, inflammation of absorbents, abscesses, &c.

Art. VIII.—*An Inquiry into the Nature and Pathology of Tetanus; with a view to decide the question as to the propriety of Amputation or other Surgical Operations in Traumatic Cases. And Remarks on the Peculiar Action of Chloroform, Nicotine, and the Wourali Poison*[a]. By S. Henry Hobart, A. B., M. B T. C. D., &c., Medical Officer, Cork Dispensary.

Long as tetanus has been under the consideration of medical men, it must still be admitted to be a decided "opprobrium medicorum;" few diseases being more universally fatal, or less amenable to treatment. Hippocrates, Plato, Galen, Aretæus, &c., have all written on the disease, and shown a very intimate acquaintance with the subject. The latter writer speaks of the three varieties,—emprosthotonos, opisthotonos, and tetanus; he, also following Hippocrates, distinguishes between tetanus from a wound and that coming on from cold, &c., and fully recognises the greater severity of the traumatic cases, for he says that, "spasm from a wound is fatal;" and in another place:—"But if spasm be connected with a wound, it is dangerous, and little is to be hoped." With regard to difference of age, he says, "children are frequently affected, but do not often die." Under the head of treatment he recommends general bloodletting in moderation, but judiciously advises gentleness in the operation, for fear of exciting spasm; at the same time he administers soft, nutritious food to support the strength; he applies cupping instruments to the occiput and to each side of the spine; assafœtida and castor, on account of their antispasmodic properties, he also extensively employs. Paulus Ægineta speaks of almost the same treatment as Aretæus; he approves of cupping with scarifications, but considers dry cupping injurious. Celsus is doubtful of the propriety of venesection, forbids the early use of wine, and approves of cathartics. All the ancient authors have a high opinion of emollient applications, such as bladders containing warm oil being applied to the parts most affected; also a bath of warm oil (which appears to have been a rather expensive remedy) and enemata were in common use.

Now, when we compare this, the state of the subject over a thousand years ago, with our knowledge of it at the present day, we are constrained to admit that little has since been done beyond confirming the propriety of the treatment of the ancients, and showing that they sometimes did, as if by accident,

[a] Read before the Cork Medical and Surgical Society.

what has since appeared to be indicated by pathology; thus, the propriety of Aretæus' plan of cupping the occiput, &c., is supported by the fact of congestion being so often found in the membranes of the medulla oblongata, &c. And indeed, with the exception of Larrey's suggestion, to amputate the injured limb in traumatic tetanus, very little novelty has since been introduced. It is to this course of treatment, which, after a short career, has now almost fallen into disuse, that I desire to call the attention of the profession, as, notwithstanding the prevalent opinion of the day, which too often influences individual conviction, I feel by no means satisfied that a sufficient trial has been given to the practice to warrant our condemning it, if indeed its utility has not been already fully proved. An almost universal cry has been raised against amputation, because several cases so treated have terminated fatally, and in some the disease has been aggravated, and the fatal result materially hastened; but will this justify our condemning a practice in other instances attended with the best effect? As well might a surgeon condemn the operation for strangulated hernia on the plea that it is not always a successful one, and that death is sometimes hastened by the shock of the operation. In the above remarks I wish to be understood as contending for the utility of amputation, merely as *one of the means* of severing the communication between the injured part and the sensorium; and in the following observations I shall refer to cases illustrative of the advantage to be derived from the various plans that may be adopted for attaining the same object. Dr. Copland (who, in his "Dictionary of Medicine," gives the most able article on tetanus that I have seen) is of opinion that the disease may be produced in different ways:—

First, that irritation at the peripheral extremity of the nervous sphere may be propagated by sentient nerves to the nervous centre, and be reflected thence on muscular parts by motor nerves.

Secondly, that in certain cases, as in the idiopathic variety, inflammation or congestion of the medulla oblongata, or medulla spinalis, or their membranes, occurs, and that the tetanic symptoms are in those cases the manifestation of the early stage of this inflammatory change.

And thirdly, that when tetanic spasms are produced in the first manner, viz., by irritation transmitted and reflected, the inordinate contraction of the muscles causes an increased demand upon the circulation supplying the nervous centres which actuate these muscles; and that this increased vascularity quickly leads to congestion or inflammation.

In reference to the first of these theories it is right to mention that it, or at least an identical one, in connexion with chorea, convulsions, &c., was put forward by Dr. Copland two years before the first writings of Dr. Marshall Hall on reflex action appeared; and the latter author has since ably contended that all convulsive diseases are caused by reflex action. Though reflex action, excited by local irritation, may appear at first sight scarcely adequate to produce all the symptoms of tetanus, the following facts will go far to prove that it is, in some instances at least, the only apparent cause. Let us take, for example, the well-known case related by Professor Robinson, of the negro who scratched his thumb with a bit of broken china, and actually died of tetanus in a quarter of an hour afterwards; or one which Dr. De Ricci so well describes[a], in which the symptoms of tetanus were well marked in four hours after the receipt of the injury; in either of these cases it appears almost incredible that inflammation could have been set up, or that any pathological change could have occurred in the nervous centres in the short time that elapsed between the occurrence of the accident and the appearance of the symptoms; and without some such change there is no way in which we can explain the production of tetanus but by this system of reflex action.

Again, it is universally admitted that convulsions in children are commonly caused by the irritation of teething, or of worms in the intestinal canal. This is evidently the result of reflex action; on which account it is that these alarming symptoms are so often immediately cured by the removal of the cause of irritation. If, then, convulsions can be caused by reflex irritation, why should not tetanus—a disease so very analogous—be produced in a similar manner? And if it be admitted that this cause is capable of producing the disease, no man can dispute the advisability of amputating in the early stage of traumatic cases, or of otherwise removing the source of irritation, so long as there is reason to hope that no other lesion exists: moreover, cases of recovery from tetanus, where amputation had been performed for the arrest of the disease, have been related by Larrey, Valentin, White, Howship, and others. Dr. Curling states that it was resorted to in eleven of the cases in the Table which he gives, and of these, seven were cured.

Though the cases related by Baron Larrey have been over and over again referred to by various writers, they appear so

[a] Dublin Quarterly Journal, August, 1850.

important, as bearing on the subject, that I make no apology for the following short allusion to some of them. I quote from Cooper's "Surgical Dictionary." It would appear from the following extract that his attention was first directed to the subject more by accident than by preconceived opinion:—"The equally *unexpected and entire success*," observes Larrey, "obtained by the amputation of the injured limb, in the person of an officer attacked with chronic tetanus, leads me to propose the question,—Whether, in this disorder occasioned by a wound, it would not be better to amputate the injured limb immediately the symptoms commence, rather than expect from the resources of nature, and from very uncertain remedies, a cure which so seldom happens"[a]? &c. In another case he repeated the experiment "where acute tetanus had set in: the symptoms were stopped, as if by enchantment; the patient passed twelve hours in perfect ease, but, being exposed to damp, cold air, the disorder returned and carried him off"[b]. He likewise adduces an interesting example, in which speedy relief and a cure followed the cutting off of all communication between the nerves of the wounded part and the sensorium, by a suitable incision. He has also recorded some convincing proofs of the benefit sometimes arising from the division of the trunk of the injured nerve. In one instance tetanic symptoms followed an injury of the supra-orbital nerve, but were immediately stopped by division of some fibres of the occipito-frontalis and the nerves and vessels down to the bone. In another he suspected the disorder to proceed from a principal branch of the crural nerve being tied together with the femoral artery, and he cut the ligature. The relief was only partial and temporary; the cautery was therefore applied deeply to the whole surface of the stump, a marked amelioration took place a few hours after, and the patient recovered.

A very interesting case is related by Dr. De Ricci, in the paper from which I have already quoted, in which amputation was had recourse to by Mr. B. Cooper, in Guy's Hospital. The operation was performed at 4 o'clock, P. M., and next morning the man was perfectly free from any appearance of tetanus, though the symptoms had set in with considerable severity, had increased rapidly up to the time of operation, and gave every indication of running a rapid course. Dr. Murray describes the case of a midshipman who trod on a rusty nail, which penetrated the left foot; he had to keep watch on deck after the accident, and was exposed to wet and cold in the

[a] Mémoires de Chirurgie Militaire, t. i. p. 262. [b] Ibid., p. 263–69.

night air. This occurred at 9 in the evening; at 8 next morning tetanus had set in. Other means having failed, Dr. Murray cut down on the posterior tibial nerve, and divided it. Though the patient was unable to articulate before the operation, he immediately opened his mouth with an exclamation, and expressed himself already much relieved; and although the symptoms returned afterwards in a mitigated form, he completely recovered in the end[a]. Mr. Samuel Cooper states, that the practice of nearly surrounding the wound by a deep incision has been had recourse to in University College Hospital, "and that most of the cases have been in favour of the plan"[b]. Dr. E. Phillips relates a case of severe tetanus, of several days' standing, from gastric irritation. After a variety of other means had failed, the patient was given a turpentine enema; in five minutes a copious stool was discharged, and the tetanic symptoms were quite relieved; next morning an intestinal worm was expelled, and the patient quickly recovered[c]. Dr. Mitchell mentions a case of tetanic spasm of the tongue and muscles of the face, caused by extraction of some carious teeth; and he alludes to a similar instance which occurred under the care of Dr. Thompson[d].

The above facts are, I conceive, amply sufficient to show that tetanus is in several cases—at least in the early stage—entirely dependent on local irritation, transmitted along the nerves to the sensorium, and that the removal of the local irritation, or the prevention of its being transmitted to the sensorium, is in some instances capable of putting a stop to the disease, and in others of greatly mitigating the symptoms.

But, on the other hand, it has frequently happened that amputation has been resorted to, or the source of irritation otherwise removed, and the disease has not been cured; on the contrary, the symptoms have been occasionally aggravated. In those cases there must evidently have been some pathological condition established capable of keeping up the disease after the local irritation had been removed; and this is exactly what we might expect if we adopt the theory to which I have already alluded, as suggested by Dr. Copland, that when the tetanic convulsions have lasted for some time (as the result of reflected irritation), congestion or inflammation of the medulla oblongata, or of its membranes, sets in; and that this state, when produced, is adequate of itself to keep up the symptoms

[a] Dublin Journal of Medical Science, vol. v.
[b] Surgical Dictionary, p. 1232.
[c] Medico-Chirurgical Transactions, vol. vi. p. 65.
[d] Library of Medicine, vol. ii. p. 241.

of tetanus. Now, in order to render this theory convincing, it is necessary to consider the following points:—

1st. Is inflammation or congestion of those parts capable in itself of giving rise to tetanus?

2ndly. Is the condition likely to arise either as the result of violent muscular action, or of the transmission of irritation to the nervous centre? And—

3rdly. Have we sufficient reason to believe that it does arise in the course of the disease?

It is scarcely necessary to consider the first question at all, every writer on spinal meningitis speaking of the occurrence of symptoms which at least very strongly resemble tetanus. Dr. Bennett, in describing the symptoms, says[a]:—"As the disease advances there are convulsive contractions of the neck and posterior part of the trunk; sometimes there is complete opisthotonos." Again:—"In other instances there is trismus." Again:—"When the tetanic spasms are intermittent," &c. In comparing cerebral meningitis of the base of the brain with that affecting the upper surface, the same writer says:—"There is a greater prevalence of spasm, tonic and clonic. These pathological features are ascribed to the disease being seated in the immediate neighbourhood of the medulla oblongata and cerebral centres in general. . . . While a higher degree of vascular turgescence, by irritating the excito-motor nerves, induces spasms"[b].

"Among the commonest symptoms of inflammation of the meninges of the cord," Dr. Watson mentions "rigidity or tetanic contractions, and sometimes violent spasms of the muscles of the back and neck, amounting, in some instances, to perfect opisthotonos."

Though tetanic symptoms are here attributed to the spinal meningitis, it may be fairly questioned whether those symptoms are the result of the meningitis at all, or whether they may not be caused by some peculiar condition of the medulla oblongata itself, commonly accompanied by congestion of the membranes; but as the meningitis is an obvious lesion, while the peculiar condition of the medulla (if such exist) has never been demonstrated, it appears allowable to attribute the symptoms to the former, though the difficulty of understanding how any affection of the membranes could cause spasm (while a like affection of the cord itself has not that effect) may lead us to suspect the existence of some intermediate cause. Of course this question applies equally to all cases of idiopathic, or such

[a] Library of Medicine, vol. ii. p. 189. [b] Ibid., p. 34.

cases of traumatic tetanus as are supposed to depend on congestion or inflammation of the spinal meninges.

With regard to the second question, whether congestion or inflammation of those parts is likely to arise in the course of tetanus depending on reflex irritation,—I have already alluded to the opinion of Dr. Copland, but upon this point I may be permitted to quote his own words:—"That in cases which arise from irritation in some distant part, transmitted to the nervous centres, and reflected thence upon contractile structures, and in which inflammatory action is either absent, or its existence is problematical, at an early period of the malady at least, we cannot infer, agreeably with what we know to take place in the animal economy, that inordinate or continued contraction of muscles can exist without an increased demand being made upon the circulation supplying the nervous centres which actuate these muscles, and hence we may conclude that increased vascularity, or even the earlier stages of inflammation of these centres and of these membranes, may be the *necessary consequence* of the continued and inordinate muscular action constituting the disease." Nor can there be the least question of the fact, that increased duty being required of any organ is necessarily attended with increased vascularity; neither does it appear inconsistent with analogy that the same cause may lead to decided congestion, or even inflammation.

Again, it may be asked,—May not the irritation, transmitted to the centre from the injured parts, be capable in itself of exciting inflammation, just as a particle of dust irritating the conjunctiva will produce a like condition of that membrane? And further:—May not the irritation thus applied lead (in some cases) to this lesion of the spinal meninges, without producing any muscular contraction as the result of reflex action, but this condition, when established, cause the first symptoms of tetanus; for how can we otherwise account for the fact that tetanus occasionally makes its first appearance after the wound itself has completely healed[a]? That this, however, is not always the course of the disease, has been already proved.

The third question is as easily answered as the first, it being universally admitted that at least congestion, if not inflammation of the medulla oblongata, and of its membranes, is by far the most common pathological condition found in fatal cases, being present in the majority of instances, particularly if examined sufficiently soon after death.

From the above facts I have no hesitation in coming to the

[a] Library of Medicine, p. 236.

conclusion that our first duty, on being called to deal with a case of traumatic tetanus, is to consider by what means we can best remove the source of irritation. Should it be caused by a bad injury, such as would of itself materially endanger the limb, independently of the complication with tetanus, let amputation be at once resorted to; but should the injury be of a less serious nature, and be so situated that the nerves leading from the part can be readily divided, then by all means let the preference be given to this milder course; but, notwithstanding the success attending this plan of treatment in Dr. Murray's case, and the high opinions entertained of it by some writers[a], yet it must be admitted that, though a milder operation, it is applicable to comparatively few cases: we can but seldom be sure of what nerve, or how many of them, may be in error; nor, even should this be decided, would it be always possible to divide those that we should wish, without the risk of leaving a paralyzed and useless limb, or of wounding some other important part. In other cases the wound may be very trifling, one affecting merely the skin, in which case no demonstrable nerve may be ascertained to be injured. Under such circumstances we may resort to the expedient referred to by Mr. Cooper as being so successful in University College Hospital, and also spoken favourably of by others, namely, almost surround the parts with deep incisions, or, what would appear still more satisfactory, excise the injured parts altogether, and bring the edges of the new wound together. And, indeed, should this operation not prove almost immediately successful, we ought then to consider what nerve supplies this portion of integument, and at what part of its course can it be easily and safely divided. I would venture still to hope that this secondary operation might be attended with benefit, even after the excision of the injured part had failed, on the supposition that inflammation may have extended up the nerve for a short distance; and that this may, in some instances, be capable of keeping up the disease, on the same principle of reflex action, while yet the medulla oblongata had not suffered any injury; and the fact that the nerves of the affected limb have been often found in an inflamed condition shows the possibility of this theory.

The success of any of the above means must, of course, mainly depend on the promptitude with which it is under-

[a] Dr. Bennet says: "It is a singular fact that this practice, which our knowledge of pathology and physiology shows to be necessary, and likely to be successful, has only, as far as medical records go, been performed four or five times, but in all these with perfect success."—*Library of Medicine*, vol. ii. p. 242.

taken: if done in the very early stage, we may fairly hope that the disease will be thereby quickly arrested, but this can occur only in case the local irritation is still the sole cause. But suppose the secondary cause has already commenced in the medulla oblongata, may we not expect that some advantage may still be derived from the same treatment? If irritation "transmitted to the nervous centre," &c., be in the first instance capable of producing the disease, it must, after another cause for the same is established, be still calculated to produce the same result. And thus, there being two causes in operation, the effect must be doubled, but when the primary cause is removed we have then but one condition to treat, namely, that of the nervous centre, which we may hope to cure by appropriate treatment, without the danger of its again returning, whereas, had we even succeeded in curing it while the primary cause remained, it would, in all probability, be again renewed by the same means by which it was first excited.

Several cases of tetanus have, from time to time, been related, in which surgical means have been used to cut off the source of irritation, with the effect of producing complete relief from the symptoms for some hours; but, after an interval of apparent health, the disease has again returned, and though in some instances in a mild form, has occasionally proved fatal. The most rational explanation of this appears to be, that, previous to the removal of the injured part, inflammation (or whatever the peculiar condition of the nervous centre may be) had just commenced, and that, though its exciting cause was removed, it still continued to advance, until it reached that state at which it was capable of producing tetanic symptoms. Again, in some of the cases above alluded to, the relief of the symptoms does not appear to have immediately followed the performance of the operation, but to have occurred in some time afterwards; in that, for instance, where Larrey suspected the nerve to have been included in the ligature with the femoral artery, and when, after the failure of other means, he applied the actual cautery, the improvement is said to have taken place a few hours after the operation; and in that reported by Dr. De Ricci, as operated on by Mr. Cooper, it is said that next morning the man was free from tetanic symptoms, showing that the relief did not occur at once, but probably at some period during the night. Were either of those cases to occur under the observation of a man prejudiced against operative interference, while, at the same time, some favourite form of treatment was put in practice, it is not improbable that the recovery would be attributed to

the latter, because it was not the *immediate* effect of the former. But are we justified by analogy in expecting that the removal of the local irritation should always be immediately followed by the cessation of the spasms, even when undoubtedly caused by that irritation? By no means; for we frequently meet with cases of convulsions in children, resulting from the presence of intestinal worms, where, after the expulsion of the worms, the convulsions still continue for some time, and finally subside without the administration of any further remedy, or the expulsion of more worms; as if such a state of excitation became established in the nervous system that it required time to regain its natural condition. Indeed, I have little doubt that the result of many of the cases of tetanus that have from time to time recovered has been (in part, at least) due to the fact of the local irritation having ceased to act, either from the wound having taken on a healthy action, or from the sloughing of the part; but that the connexion between this change and the first amelioration of the symptoms not being sufficiently striking, the cure was attributed to the treatment adopted. Thus there are three cases referred to in Sir James Mac Grigor's Report on the Diseases of the Army, where venesection was fairly tried, and the only one in which recovery took place was one where hospital gangrene attacked the injured hand[a].

Here the recovery might be attributed to the treatment by blood-letting; but it appears much more rational to suppose that the sloughing of the part removed the local irritation; in fact, it amounted to exactly the same thing as amputation of the portion of the limb that sloughed.

I have already referred to the fact, that some cases of tetanus have been met with, in which the disease has been aggravated by surgical interference; in some instances the muscles, on being cut through, have been rigidly retracted, so that it has been impossible to keep the soft parts in contact, though the bone had been very freely cut away, while the patient's sufferings can be better conceived than described; this is caused by the greatly increased sensibility of the excito-motor system, so often observed in tetanus, the least cold draught frequently leading to violent convulsions; and when, under these circumstances, so very painful an operation as amputation is resorted to, it appears no way strange that the effect would be thus severely felt; but with such an agent as chloroform at our command, capable of arresting this morbid

[a] Medico-Chirurgical Transactions, vol. vi. p. 455.

sensibility, we need no longer fear this ill consequence; and thus the principal objection which has been urged against operation is at once removed.

With regard, however, to the more extensive use of chloroform, as also of nicotine, the wourali poison, and similar medicinal agents, I would be very cautious of pronouncing any of them deserving of the name of a cure for tetanus. They will arrest the spasms, and thus relieve from much suffering, and if the system be brought early and fully under the influence of any one of them, and its effect be kept up unremittingly, until the source of irritation is removed, it may possibly prevent the development of the secondary lesion in the nervous centre. But should this condition of the nervous centre (or the secondary cause, as I have termed it) have already set in, it is quite evident that no remedy of this class can have any effect in curing it. But though such agents can remove neither the primary nor the secondary cause of tetanus, the fact of their allaying suffering, and the hope that they may prevent the development of the secondary cause (though they cannot cure it) renders them well worthy of our close attention. Let us inquire, therefore, which of those agents is the best suited to our purpose, which will act most directly on the disease, and which has the least ill effect on the system generally? The object in all cases is to produce paralysis of the voluntary muscles; this is accompanied, where chloroform is used, by a complete loss of consciousness, preventing the patient from describing his own feelings, a most important guide as the case advances; he is also unable to call for food, or to take it if offered to him, unless he be allowed to recover, in some measure, from the effect of the anæsthetic, and then, as soon as consciousness begins to return, the muscular contractions reappear in equal proportions. There is another objection which I conceive exists against the use of chloroform in cases of tetanus, namely, that of causing congestion of, and even effusion into, the bronchial tubes, upon which points I have made some remarks in describing a case of tetanus, in another part of this Journal[a]. Nicotine, on the other hand, seems to be capable of producing the desired effect without interfering with the mental faculties; in fact, it brings the system into a state almost the direct reverse of tetanus. It appears also from recent experiments that it is likely to prove useful as an antidote against strychnia. Professor Haughton has lately read before the Irish Academy an account

[a] See Proceedings of the Cork Medical and Surgical Society, in Part iii.

of some experiments performed by him, on this question, with the following results:—Frogs placed in a solution of nicotine were quickly paralyzed, and died in a state of complete relaxation; others, placed in a solution of strychnia, died of convulsions; but when others were placed in a combined solution of the two agents, though this was amply strong to cause death by either, it only caused slight convulsions, and that after a long immersion, and the frogs, on being removed from the bath, soon recovered; and had it contained a little more nicotine, there is little doubt but that the effect of the strychnia would have been completely neutralized. Now, as the symptoms of tetanus and those of poisoning with strychnia are almost identical, it may fairly be expected that nicotine would be equally useful in the one as in the other. Still, there is one strong objection to the use of this medicine in such cases, namely, its extremely depressing effects on the circulation.

Now, tetanus itself so debilitates the system, that quina, wine, and broth, are of late among the most favourite remedies; and when we attempt to cure such a disease with, perhaps, the most debilitating agent in the Materia Medica, the risk must be obvious. It therefore remains to inquire, are the same objections applicable to the use of the wourali poison, or is it capable of paralyzing the voluntary muscles without interfering with the action of the heart? On this point I would refer to an experiment by Dr. Pavy, of Guy's Hospital, the principal features of which were as follows:—A pup, four or five months old, had a small quantity of the poison introduced under the skin of the back: the animal soon became weak, and shortly was quite unable to stir; the limbs and the body became perfectly flaccid, and at last all appearance of life ceased. Meanwhile, a tube had been introduced into the trachea, and as soon as the animal was unable to breathe naturally, artificial respiration was established, and the heart's action, which had previously become very feeble, was quickly restored, and it continued to act firmly and regularly so long as artificial respiration was continued, showing that wourali kills by paralyzing the voluntary muscles, and, among others, those of respiration; death therefore resulting from asphyxia, while the heart's action is not at all affected, except as the result of impeded respiration. By another experiment he found that, under the influence of strychnia, also death by asphyxia was the result; but in this case the thorax was fully inflated and rigidly fixed, while with the wourali it was collapsed and flaccid. This rigid condition of the chest was found to render artificial respiration very difficult; but on raising the sternum,

and allowing the pressure of the air to act on the lungs and assist in expiration, it was easily established, and, as in the former experiment, the heart, which had almost ceased to act, quickly recovered in the same manner[a]. The opposite and counteracting effects of strychnia and wourali have been more fully illustrated by Dr. George Harley[b], viz.:—"1st. A frog was poisoned with 1–500th of a grain of wourali. Three minutes after he had become perfectly insensible, 1–120th of a grain of strychnia was injected: in five minutes he became tetanic. 2nd. A frog was poisoned with 1–120th of a grain of strychnia: three minutes after, tetanus was strongly marked. He was punctured with 1–500th of a grain of wourali: in seven minutes tetanus disappeared. 3rd. 1–500th of a grain of wourali, and 1–40th of a grain of strychnia, were injected into the abdomen of a frog: in five minutes it became very tetanic, in twenty minutes more it was perfectly flaccid, and next day was perfectly well." These experiments again would encourage us, from the analogy already alluded to, to hope that wourali might have a like influence on tetanic spasms.

There is another question, however, which arises in considering the value of each of those agents, namely,—By what means do they occasion paralysis? Is it by their action on the nervous system, or by some influence over the muscles themselves, independently of all nervous supply? That chloroform and nicotine act on the nervous system there can be no doubt, but the *modus operandi* of wourali is much less known, as being a rarer and more novel agent. Dr. Pavy states that it acts on the nervous system; for that, if any of the nerves be irritated, or an electric current be passed along them, no muscular action is produced, but that if a current be passed through the muscles themselves, they immediately contract. He does not appear, however, to have proved this himself by any particular experiment, but only states it as a fact. I have good reason to know, however, that by a series of experiments lately conducted in Paris, and which will be shortly published, it has been proved that on this point Dr. Pavy is in error, as I have been informed by an eye-witness, that in the experiments alluded to, electricity, passed through the muscles of an animal under the influence of wourali, did not cause the slightest contraction; but that when the muscles of an animal paralyzed with nicotine were electrified in the same way, they contracted freely. In either cases irritation of the nerve, or

[a] Guy's Hospital Reports, Third Series, vol. ii. p. 408.
[b] Braithwaite's Retrospect, vol. xxxiv. p. 430.

electricity passed along a portion of it, did not cause contraction. This proved that either the nerves or muscles were paralyzed; in the case of the nicotine the muscles were proved not to be affected, as they contracted when the stimulus was applied directly to them; and in the case of the wourali it was shown that they were affected, as they did not contract. We may therefore conclude that wourali acts on the muscles, but has no influence on the nervous system. I regret that I am unable to enter more minutely into those experiments, but as they have not yet been made public by the investigator, I am not at liberty to speak more fully.

This question, as to the *modus operandi* of wourali, &c., is, I conceive, a matter of no small moment in the treatment of tetanus. But in order to explain its importance, I must here beg to revert to Dr. Copland's theory, that the secondary cause of tetanus (that affecting the nervous centre) is caused by the violent action of the muscles, &c., for in this he appears to be in some measure in error, though until we come to consider the action of such a medicine as wourali, the errors appear to be merely technical. Thus he looks upon the muscular contractions as demanding an increased supply of *vis nervosa*, and that, to supply this, increased energy was necessary on the part of the nervous centre, and hence the increased vascularity, as if the muscular contractions were the cause of the nervous force being developed; whereas, if we consider for a moment, we must see that it is the irritation transmitted from the injured part that induces an increased excitement of the nervous centre, which then develops the nervous fluid in unwonted quantity, and that the fact of the muscles not contracting under the influence of this nervous force, either in consequence of their being paralyzed by wourali, or any other cause, cannot diminish the excitement of the nervous centre, nor prevent the development of the secondary cause of tetanus. But as nicotine and chloroform have at least some action on the nervous system, they may be capable of rendering it insensible to the irritation transmitted from the local injury, in which case they would prevent the development of the secondary cause as long as their influence was fully kept up. I would, therefore, recommend that if it be impossible to remove the local irritation (i. e. the primary cause), one of those agents should be used, but if this be got rid of, the preference should be given to the wourali, in consequence of its not acting on the heart or other involuntary muscles. The surgeon should, however, be fully prepared to keep up artificial respiration in the event of that function becoming seriously embarrassed.

If, however, we hope to cure tetanus after the secondary cause has commenced, we must not depend on those agents alone. We should use one or other of them on account of the good effects already alluded to, but we must at the same time pay due attention to the nervous centre, and remember that this is the part now chiefly engaged. It must be admitted that many cases of tetanus have been treated very actively for myelitis and spinal meningitis, and that the result does not warrant our pronouncing it a more successful plan than some others; but then it is to be remembered that while this was being attended to, other means were neglected; whereas, I have no doubt that if ever tetanus be brought to rank as a disease amenable to treatment, it will be by the adoption, not of any one plan of treatment exclusively, but by a combination of all the means that are indicated in its different stages:—

First, the removal of the primary cause (the local irritation).

Secondly, in the event of this not proving efficacious, our attention is to be turned to the consideration of the secondary cause, and meanwhile we must endeavour in all stages to allay the convulsions by the most appropriate agents; nor are we to be unmindful of such means as the peculiarities of each case may require, as stimulants, antiphlogistics, tonics, sedatives, purgatives, &c.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Des Anéurysmes et de leur Traitement. Par Paul Broca. Paris: Labé, 1856. 8vo, pp. 931.

The many and important improvements which have taken place in almost all the varied and numerous branches of the surgical department of the profession, within the last half century, have gradually wrought such a complete revolution in its character as to render it, in fact, a science quite different in its nature from what it originally was; and many of those so-called standard rules, which were once observed with such jealous and scrupulous fidelity, have been latterly neglected or wilfully transgressed, under the benigner influence of that additional light revealed by the discoveries of modern science. The bonds once loosened forming the chain which so servilely bound our predecessors to follow in a beaten track, it is astonishing with what rapidity improvement has followed on improvement, and one startling fact has scarcely been published to the world at large, before another appears closely in its wake, as striking in its conception as amazing in the results which it may yet produce in the career of those affections of which it professes to treat. Taking, as an example, conservative surgery—how little, as an art, was this understood some years ago! How many are the lesions formerly attended with such a tremendous sacrifice of parts, so essential to the different functions of the animal economy, that now yield successfully to its more genial sway, leaving to the unfortunate sufferer, in many instances, powers but slightly impaired, and a freedom from that deformity, generally the inevitable result of the most favourable operation! Nothing perhaps could have been more completely calculated to impress the mass of mankind with a horror and loathing of our profession than the heroic practice advo-

cated and too often practised by our forefathers; and though their object was, undoubtedly, the anxious desire to confer on their patient the greatest amount of permanent security, still they appear sometimes to have overlooked altogether the immense expense at which such a condition of affairs might occasionally be purchased. The operating surgeon should always bear in mind, that the friends or relatives of the mutilated victim will invariably look only to the result, and but rarely to the cause, that may have rendered such a result absolutely necessary; for their circumscribed faculties can never understand, much less appreciate, that quick acumen and power of discrimination which will devote, without hesitation, to destruction an offending, but unimportant part, in order to insure the safety of the whole.

It would be well indeed, if, under all circumstances, we could observe that happy medium in our conduct, which would enable us to come to a proper decision in all those instances where the scales are almost evenly balanced as to the necessity, or the reverse, of a capital operation ; but, most unhappily, the prestige invariably consequent on its successful execution, amongst the profession at least, must always create a marked preponderance in favour of the attempt. In cases of this kind we are strongly of opinion that many a grievous fault has been committed, and, in confirmation of this view, we could quote more than one undoubted instance, that has come immediately under our own personal inspection, where a capital operation was performed for a suspected lesion, which had its existence only in the fertile imagination of the operator himself. Hence it would appear, that the operating surgeon is too often hurried away by a vain but insatiate desire of applause, appearing to forget altogether, that the very highest skill and dexterity that he may display are, after all, but purely mechanical, requiring no exercise of superior genius, and that, at any moment, another with stronger nerve and nicer manual adaptation, though with only a tithe of the same talent and acquirements, may with facility rival, nay, even completely surpass, his most finished and successful effort. But let those two individuals be placed in such a position, where the decision of superior ability will depend on the anxiety to save, and not to extirpate, an affected part,—here the light of the superior intellect of the one will shine forth with unclouded brilliancy, strongly contrasting with the vague and ill-directed attempts of the other, powerless in his struggles against the ravages of a disease, the nature of which his inferior capacity is unable to comprehend, and is as utterly inadequate to control. Not so the master-mind, strong

in the instinctive feeling of its own resources, meeting the insidious enemy step by step—retarding where he cannot effectually check its continually advancing progress—watching patiently for that favourable moment when a decided measure on his part may be attended with a chance of success, and ultimately triumphing, by a happy combination of judicious skill and unyielding perseverance.

We have hazarded these remarks, not that we would utterly disclaim the employment of measures, no matter how painful in their nature or disagreeable in the consequences which they must necessarily entail on the patient, but that we would most strenuously protest against their indiscriminate use, more especially where the same results may be accomplished by means more lenient and more in unison with the feelings entertained by the great majority of mankind. The strongest mind will naturally recoil from even the contemplation of a capital operation; and how much less calculated must they be to tolerate its stern reality whose constitutions are shattered by suffering, whose nerves are completely unstrung, and whose entire symtem is wound up to that unnatural pitch of excitement that the slightest cause will be always sufficient to induce an amount of agitation, in many instances more painful to him that is compelled to witness it than to the actual sufferer himself. It is in cases of this description that the talent of the accomplished practitioner becomes conspicuous. His gifted mind, pondering over every circumstance, will ultimately devise some happy expedient,—incomplete, indeed, at first, but gradually improving in its adaptation, until at length it is rendered fully capable of superseding the more barbarous system that preceded it, though rarely to the lot of a single individual devolves the honour of bringing it to its last stage of perfection.

Have we not, in these few sentences, contained the entire history of aneurism, with its progressive treatment from the earliest days to the present time? The character of that alarming tumour, throbbing so fiercely and without intermission from the effects of the vital fluid that permeated its interior, was at first but little understood, until experience, impressed from numberless observations, slowly established its real nature, showing that its integrity was essential to actual existence, as it was discovered that from its ruptured walls must flow that bright arterial current on which depended the principle of life. Hence arose the age of reckless amputation, with the harrowing and revolting searing-iron,—the only means at that period known for checking those impetuous streams that poured forth their contents at each successive gash of the rapid

knife; and if complete success would have been the invariable consequence of this cruel and barbarous proceeding, we might have been inclined to regard the steps that were pursued with an eye of greater indulgence, as in cases of such imminent risk, where the very existence is jeopardized, the end must always justify the means employed to insure its preservation; but, most unhappily, the exact reverse was generally found to obtain; and even in those rare exceptional instances where recovery did occur occasionally, every candid mind must acknowledge that this favourable termination was purchased at a price so painful and agonizing to the wretched patient, that the suffering he was obliged to submit to might fairly compete in intensity with many of those fiendish tortures that once formed those foul and degrading stains in the annals of our unenlightened criminal code. It was utterly impossible that a practice so barbarous should be allowed to continue as our knowledge of the principles on which the safety of the human frame depended was gradually opened to the comprehension, and we accordingly find that the happy idea of the controlling power of the ligature over the bleeding vessel was most fortunately suggested to the imagination of one man, Anel, to whom is unquestionably due the merit of its first application, the success of which has been confirmed by the experience of years. Still, it was reserved for another great luminary, John Hunter, to render this important discovery amenable to the treatment of the disease at present under consideration; and the steps which he conceived and so happily carried out were sufficient to overthrow for ever those horrible measures that we have already cursorily alluded to. Improving on the principles so lucidly laid down by him, his followers by degrees reduced the operation required for this formidable disease to a state of simplicity strikingly contrasting with the former mode that was thought necessary for its cure, and all rejoiced at such a complete revolution, which comparatively appeared to leave nothing further to be desired. But the intellect of man, unbounded in its resources, would truly seem to recognise no law which would place a limit to its progress, and the last few years has witnessed another change as remarkable in its nature as conclusive in its effects,—we of course allude to the cure of aneurismal tumours by compression. That this method of treatment—from whatever source the idea may have first emanated—owes its present stable footing to the perseverance of Irish surgeons, there cannot exist the remotest shadow of a doubt; as, in the very teeth of the extremest prejudice and opposition, they never for a moment relaxed in their efforts, but

laboured unceasingly, by a series of unquestionable experiments and well-authenticated facts, to accumulate such an extensive mass of evidence in favour of the doctrine which they were so anxious to establish, that their united testimony can now no longer be shaken, either by direct contradiction, or, what is more difficult to be encountered successfully, by the more insidious attack of ridicule. We are deeply gratified to find that M. Broca, in the work before us, has not failed with a manly candour to acknowledge the claims which they possess, and in doing so to quote the names of several of our Dublin surgeons, with many of their cases, in connexion with his essay on Compression.

M. Broca, in the first part of his volume, has devoted his initiatory chapter to the pathological consideration of aneurisms, commencing by stating, very truly, it must be allowed, "that the above nomenclature has been applied to several affections which differ from each other in certain particulars, but which in the meantime still resemble each other sufficiently to render it useful to the practitioner to submit them to a common study. With respect to symptoms, aneurisms are tumours, situated over the track of arteries, in general pulsatile, capable of producing a *bruit de souffle*, very often having a tendency to increase in size, and owing those different characters to their connexion with the arterial circulation.

"With regard to treatment, aneurisms still possess a certain similitude. Although each kind may give rise to particular indications, there is still a certain number of therapeutic methods, essential to be studied in their generality previous to discussing special applications.

"But those analogies ought not to make us lose sight of the differences which exist in the several forms of aneurism —differences that pathological anatomy points out to us, that pathology confirms, and of which therapeutics is compelled to take cognizance. I cannot, therefore, dispense with the obligation of devoting some pages to the classification of Aneurism."

In accordance with this resolution, the author proceeds at once to inquire into the propriety of including promiscuously amongst the class of aneurisms many of those tumours which have hitherto borne that designation; and amongst the first rejects that uniform dilatation of an artery described by Senac, denominated by Breschet "cylindroid," and by Chelius, "true diffused aneurism," but now better known by the more proper appellation, "arterial dilatation;" he also throws aside "the cirsoid aneurism" of the former author, referring it to the class

of "arterial varices," as suggested by Dupuytren. In this we conceive he has acted most correctly, and more so still in basing his definition of this affection on its anatomical characters, which he has done in the following words:—

"An aneurism is a tumour, circumscribed, filled with blood in a liquid condition, or coagulated, communicating directly with the canal of the artery, and limited by a membrane which bears the name of a sac."

In adopting this definition, M. Broca at once acknowledges that it will not be found sufficient to embrace every description of this peculiar lesion, as, for example, those that are at present recognised as of the diffused form. This naturally leads him to the consideration of this individual class, to which several pages are devoted, displaying a vast amount of information and reasoning; and he ultimately terminates his observations on this subject by the following detailed account of a particular variety, of which we have had an opportunity of observing more than one specimen, not only on the vessels indicated by the author, but likewise on those of the brain, the basilar and vertebral arteries having been actually studded over with them.

"I will not farther insist on the second variety of aneurism which Corvisart has discovered, and which has given occasion to disputes. Those aneurisms wich have been designated under the name of cystogenic are formed in the following manner: a cyst with walls very dense, as if composed of cartilage, or of a calcareous character filled with a substance like tallow, or of an atheromatous nature, originates in the thickness of the arterial parietes, and expands, constituting an hemispheric tumour, the size of which, always very small, varies with the caliber of the diseased vessel. This cyst, situated between the cellular and middle coat, may after a variable period open into the cavity of the artery. It produces at first an orifice almost capillary, which gradually enlarges, and finally the entire partition which separates the cyst from the artery having been gradually destroyed, there remains but the hemispheric shell, remarkable for its regularity, communicating with the vessel by an opening extremely large and perfectly round. All the stages of this singular affection existed upon the branches of the splenic artery that M. Leudet presented three years ago to the Anatomical Society. Upon the piece were observed three tumours—one without communication with the artery; another opening into the vessel by two foramina, like those made by the point of a pin, while the orifice of the third was sufficient in capacity to equal that of the

diameter of the aneurism itself. Some months after this presentation, M. Leudet showed to the Anatomical Society another tumour of a similar character, situated upon the track of the renal artery. After having studied those two preparations of M. Leudet, I confess that I am inclined to admit the reality of cystogenic aneurisms. In the meantime, serious objections have been raised in opposition to the explanation of the facts of this description. Hodgson has drawn our attention to the circumstance, that certain aneurisms cured by depositions of clots with the preservation of the permeability of the artery may give existence to tumours capable of simulating arterial cysts. He has not hesitated to assign to this etiology the facts observed by Corvisart: according to him, arterial cysts, far from being the cause of aneurisms, should have the opposite effect. It is unquestionable that the majority of the cases of cystogenic aneurisms that have been brought forward in evidence are connected simply with aneurisms cured, or in the process of cure—thus, for example, Mr. Guthrie, who claims, and with reason, for Stenzel the fact of first having pointed out the existence of cysts contained in the arterial parietes, has not observed that the case of Stenzel is very evidently connected with an aneurism of the aorta, obliterated by means of fibrinous layers. Had he read thoroughly the description of Stenzel —had he cast his eyes upon the plate that is appended to it, he would certainly have avoided this error. From what has been previously stated, the conclusion may be drawn, that arterial cysts are now generally constituted by aneurisms that have been cured; but that there is within the scope of science a very small number of cases tending to prove that these cysts may be primitive, may open consecutively into the corresponding artery, and so become the cause of a very rare variety of aneurism.

"Be it as it may, cystogenic aneurisms to the present time belong only to pathological anatomy. Their clinical history is utterly unknown. All the examples, more or less conclusive, that have been collected, are connected with internal arteries, such as the aorta, splenic, renal, mesenteric. These motives are sufficient to induce me to abstain from noticing them at a greater length in this work."

We are extremely chagrined at this determination of M. Broca, as expressed in the last line or two, for, as already remarked, the opportunities afforded by a large dissecting-room had rendered us rather familiar with several examples of the peculiar affection detailed by him; we, however, candidly confess our utter inability to offer the remotest explanation calcu-

lated to solve the problem as to the real mode of their production, but are, however, perfectly satisfied on one point,—that none of the solutions hitherto hazarded can possibly be correct, and we make this statement as the result of our own observation, as well as with the firm hope that M. Broca will yet direct his inquiring mind to the investigation and complete elucidation of this perplexing subject.

Whoever is really anxious to obtain a rational, and at the same time a distinct view of the classification of the several forms of aneurism, with the causes on which they have been based, should carefully read the author's remarks on this subject. We are satisfied that the information that must be derived from such a perusal will more than amply compensate for the time expended in the task; while the gratification experienced will be immeasurably enhanced by the plain, simple, and manly style in which every circumstance is detailed, calculated to throw an additional gleam of light on some disputed point. This chapter terminates with an ingenious table, conveying at a single glance a very intelligible idea of the phases of distinction that have been observed in this peculiar lesion, with the nomenclatures adopted from each; and we can only express our regret that we cannot afford room to extract the whole for the benefit of our readers.

The second chapter is occupied with the consideration of the etiology of this formidable disease, and while its several causes are very ably investigated, many ingenious theories, specious at a first glance, are either overthrown, or at least reduced to such a tottering condition as to render their defence scarcely tenable in a rational point of view. In the course of these observations he really appears not to have overlooked a single circumstance which could by possibility throw light on this subject. Age, sex, climate, excess, with the influence they may exercise in the production of the lesion in question, have each received their due amount of attention, and he sums up the whole with the following statement, the importance of which, if accurately correct, cannot be too highly estimated by the operating surgeon:—

"As far as the lesion is concerned, which precedes the formation of spontaneous aneurism, it oftentimes occupies a very great extent, and, where ascertained by autopsy, beyond the point engaged by the tumour. This is generally the case in aneurisms of the aorta; but with regard to external ones, the fact is not similar; more usually the vessel is healthy above and below the orifice of the sac. I am the more emphatic upon this important peculiarity, which many authors have failed to

recognise, and which will meet with its application farther on, when I shall speak of the ligature."

By a natural transition the next portion of the work proceeds to detail at some length the symptoms, progress, and termination of aneurisms in general,—at the same time carefully drawing attention to the many complications which may render their diagnosis sometimes uncertain, and in many instances almost impossible. The difficulty of always being able to draw the nice line of distinction between those affections and others of a quite different stamp, though certainly bearing a striking resemblance to them in their general characters, is admirably shown, while, to confirm and corroborate his views, the names of Dupuytren, White, Boyer, and he might have added Liston, are adduced in support of the fact, that ability of the highest order, combined with lengthened experience, cannot always be relied on as an unfailing safeguard under every circumstance against certain fatal mistakes in practice. No doubt, the advice which the author is so anxious to impress is incontrovertible in its excellence; but whilst admitting at once the justice of the precept,* "that every tumour situated over the track of an artery should always be regarded with a certain degree of suspicion, and treated accordingly with a becoming caution;" still it must be as candidly acknowledged that such a mode of proceeding is as certainly antagonistic to the principles of the surgeon, whose long and extensive practice may have rendered him comparatively familiar with almost every form of disease in its varied and protean forms, and who would look upon the premeditation prescribed simply as a process of hesitation, and, as such, a species of reproach in the eyes of the world. The abnormal swelling which he may be called on to deal with may be in its outward appearance precisely identical with some hundreds of others, which he has encountered in the course of his career, actually occupying the same exact position; and can it be wondered at that he should employ the same rapid and decisive line of treatment which had eventuated so successfully in former cases, or that he should only be awakened to the inaccuracy of his diagnosis by observing the bright arterial flood following the stroke of his knife, a termination when repentance for his unintentional indiscretion may be felt and testified perhaps too late. We have made these observations not through any desire to cast even the shadow of a slur upon the memory of the illustrious dead. Such an act would be simply ungracious, not only on our part, but likewise on that of the author whose work we are so freely criticizing in all the plenitude of strict professional confidence.

The fame of those pioneers who so gallantly guided the way in the foremost ranks of advancing science should be pure, and shielded from the very vestige of a stain, and while dwelling gratefully on the various obstacles which their skill and intrepidity have so effectually removed from our path, it should be our object to imitate the conduct, not of the recording angel as described by Sterne, but rather that of the accusing spirit, who, actuated by a feeling of scrupulous conscientiousness, inscribed the grave charge originating in man's frailty in the pages of the leger of life, to be a moment afterwards blotted out for ever by the gushing tear of pity and forgiveness.

To impress us still farther, however, with the necessity of acting with prudence, when dealing with tumours situated in a suspicious locality, he favours us with a detail of the steps adopted by the celebrated Roux, which shows most unequivocally the absolute value of proper precaution in cases of this nature.

"The diagnosis is still more difficult when a real abscess is formed in the cellular tissue covering an aneurism. When a case of this kind is presented to our observation, we ought to hold ourselves prepared for every emergency, and to act as Roux did, who, previous to opening a purulent tumour at the bend of the elbow, placed himself in the attitude of one about to perform the operation for aneurism; the incision gave exit to pus, then to clots, and lastly to arterial blood. Just as had been suspected, the abscess had masked an aneurism; but an assistant had already his finger on the brachial artery; this vessel was instantly compressed, and Roux was enabled to put in practice at once the operation of opening the sac. The patient recovered without any untoward consequences."

To such as are desirous of obtaining a succinct, but, at the same time, comprehensive idea of the mode to be pursued, in order to become proficients in the diagnosis of this affection, we would most strenuously recommend a careful perusal of the whole of this chapter, as well as the entire of the succeeding one, which treats especially of the pathological physiology of aneurismal tumours. The latter, in particular, abounds in many interesting details, not generally familiar to the reader, and has most fully discussed every possible condition that has been hitherto observed or noted as the actual cause or consequent result of this lesion. The quantity of new views which have been offered on this subject are really astonishing; and what renders the whole of such decided importance is, the accurate, but plain and simple, manner in which everything is

laid down ; all redundancy and attempt at display being resolutely sacrificed to a principle of praiseworthy utility.

In the sixth chapter we have a very excellent *resumè* of all that has been hitherto written on the spontaneous cures that are occasionally found to occur in connexion with aneurismal enlargement, and here we find the names of several of our celebrated British surgeons receiving that tribute of approbation to which they are so richly entitled from their zealous and unremitting researches in this peculiar branch of the subject. Amongst many others, we find those of Hodgson, Cooper, Home, Crisp, &c.; and, what adds materially to the value of the praise thus bestowed is,—that it has not been conferred indiscriminately; but all the doctrines which they may have advanced have been carefully criticized, and only allowed to stand when they have borne the test of a sifting and impartial examination.

The second part of the work enters very elaborately into the consideration of the several modes pursued in the mechanical or artificial treatment of aneurisms, and it strikes us that the best means of presenting a faithful and, at the same time, a concise view of its varied contents, is to give it in the tabular form composed by the author, which is, in fact, a complete epitome of the observations to be found in each of the succeeding chapters:—

"TABLE OF THE THERAPEUTIC METHODS.

1st. Direct Methods.

Methods which have for their Object the Suppression of the Tumour.

1. Opening of the sac (method of Autyllus).
2. Extirpation (method of Purmann).
3. Cauterization.

Methods which have for their Object the Modification of the Tumour.

1. Styptics.
2. Moxas (method of Larrey).
3. Endermic method.
4. Acupuncture (method of Velpeau).
5. Twisted suture (method of Malgaigne).
6. Kneading (method of Fergusson).
7. Application of heat (method of E. Home).
8. Application of cold.
9. Direct compression.
10. Galvano-puncture (method of Guerard and Pravaz).
11. Injections producing coagulation (method of Monteggia).

2nd. Indirect Methods.

1. Medical treatment (method of Valsalva).
2. Ligature above the sac (method of Anel).
3. Ligature below the sac (method of Brasdor).
4. Ligature above and below the sac.
5. Indirect compression.

3rd. Amputation.

It would be attended with very little positive advantage, on our part, to enter into a critical review of the several subjects comprehended in the above table, exhibiting, as it certainly does, almost at a single glance, every known mode of treatment which has, at different periods, been suggested or actually employed for the purpose of modifying or effectually checking the progress of this fearful affection. Many of them have now become simply matters of history, and may be considered as altogether obsolete, of no earthly interest to any one, except to those curious in such matters. Still, to present a correct and complete summary of all that has been successively introduced into practice, with the humane object of endeavouring to arrest its fatal career, M. Broca has, with a most unparalleled diligence, taken up and investigated each of the above methods, in a manner highly ingenious, and calculated to reflect great credit on his powers of discriminative analysis. His chapter, however, on the introduction of the ligature,—with its gradual advance into general use, as its power in controlling hemorrhage became better understood and more properly appreciated,—whilst replete with interest to the inquiring mind, from the admirable manner in which it has been conceived and written, is yet, unfortunately, tinged with certain features of undeniable prejudice, strikingly contrasting with the candid and generous spirit which pervades the other pages of the volume. In all that we have ever written, it has been our especial aim to recommend highly that praiseworthy principle of nationality which would lead an individual to exert himself to the utmost of his power to elevate that country to which he has been indebted for his birth, to the loftiest pinnacle of literary eminence; but, at the same time, we have as constantly and as energetically protested against every specious attempt at accomplishing that object, unless on grounds, the truth and purity of which would not admit of question. As far as we are individually concerned, it would be remote indeed from our purpose to enter into a useless and necessarily acrimonious controversy, in the vain hope of striving to settle a disputed point, dating so many years back, and which has been so amply

discussed by the most accomplished writers on both sides; neither have we any wish to express an opinion in whose favour the weight of evidence, or, more properly speaking, argument, may appear to preponderate. Did we presume to do so, it is more than probable that a certain amount of laudable prejudice might lead us to adopt and countenance the pretensions of our own countrymen, and, in so doing, we would be pursuing precisely the same line of conduct that we have a moment ago deprecated in another, an inconsistency which we are most anxious to avoid, if possible, by leaving the solution of the difficulty in the hands of others, curious in the elucidation of such details; while we are perfectly satisfied with the naked fact—that the merit of the discovery, let it belong to whom it may, was quite sufficient to blot out for ever, from the records of our profession, a mode of treatment, horrible in its very nature, barbarous in its execution, and marked by a feature still more condemnatory, most uncertain in its ultimate issue.

The article on compression is most admirably written, and is one with which every practical surgeon should study to render himself familiar. M. Broca has taken the trouble of tracing this innovation in modern practice to its first source, has accumulated a multitude of facts bearing on the subject, and has exhibited the most scrupulous care in faithfully ascribing to each individual directly connected with its operations the full amount of notice which his exertions would appear fairly to demand. Of his strict impartiality in this respect the Irish surgeon, at least, can have no just cause of complaint, for his services have neither been overlooked nor underrated: indeed, they seem to hold a very prominent position in the author's estimation; and we find the names of Hutton, Cusack, Tufnell, Adams, Todd, Duggan, and Bellingham, freely quoted, accompanied by a succinct but sufficiently copious account of the several cases that were under their immediate treatment. To the last-mentioned gentleman, in particular, he has assigned —and very properly, too, in our estimation—the merit of having first accurately and rationally explained the principle by which the cure by indirect compression is effected; an explanation apparently trivial at the first glance, but which is now very justly considered to be one of no small importance when viewed practically, as it has not only simplified the difficulties and removed much of the anxiety of the surgeon, but has likewise saved the wretched patient from an exceedingly great amount of unnecessary suffering and pain,—an advantage in itself of incalculable benefit.

Could we abstract, with any pretence at selection, from this

chapter on compression, we confess at once it would gratify us much to do so, but the whole is so beautifully dovetailed together that we feel a positive reluctance to violate the harmony of its continuity by hazarding a chance extract. More than amply will a careful perusal compensate for the labour thus expended, and all must find in its pages enough to awaken their interest, to gratify their curiosity, and to improve and enlarge their understanding.

The Hygienic Treatment of Pulmonary Consumption. By BENJ. WARD RICHARDSON, M.D. London: Churchill. 1857. 8vo, pp. 115.

THAT the value of hygienic principles and their practical application have become to a certain extent recognised, and are becoming every day more fully appreciated, is amply attested by the success attendant on the modern treatment of epidemic diseases, more especially with regard to the *preventive* measures whose adoption is suggested by these principles. The development of the *remedial* efficacy of hygienic medicine is as yet, however, in a condition of more tardy growth; notwithstanding it may be demonstrated that the same principles are as useful and as necessary in the treatment of actual disease as they are in its prevention. In the work under consideration, the author has placed before the profession, in a clear and impressive point of view, the practical advantages arising from a thorough recognition of these principles in dealing with phthisical affections, tendencies, and predispositions.

The greater part of the present essay, we learn from the preface, has been before the public already in another shape, having appeared some time ago in the pages of the "Sanitary Review and Journal of Public Health." The reappearance, therefore, of the work in its present convenient form is equivalent to a second edition. But, while this fact releases us in some degree from the obligation of entering into a full analysis of a work which is not altogether new, we cannot forego the pleasure of recording our appreciation of the enlarged and philosophic views of the author, as well as of the honest and straightforward way in which, in defiance of the conventional prejudices and fashion-founded errors which abound in these times, he has enunciated those broad principles upon which alone the development of a phthisical diathesis can be successfully counteracted, or the progress of tubercular degeneration retarded.

It is unnecessary to enumerate all the rules which form collectively the hygienic code; these rules, in all amounting to twelve, constitute the subject-matter of the first five chapters, in which the author discusses the various topics with considerable ability; and at the same time points out clearly the difficulties which attend the practical carrying out of some of the sanitary regulations, owing to particular causes.

Having shown that in order to obtain perfect success in the practice of medicine, the hygienic and curative systems of treatment must be conjoined, and having dwelt at some length on the subject of the necessary hygienic measures, he next proceeds (in chap. vi.) to speak briefly of the medicinal treatment:—

"It seems to me," he says, "that even the administration of medicines themselves must be performed by hygienic, or, in other words, physiological rules, if such administration is to be of real service. The idea of having a specific remedy for every specific disease is now pretty well exploded amongst the highly educated classes of medical practitioners, who see indeed that the whole course of medical inquiry, from Hippocrates downwards, has but discovered three, or at the most four, *bonâ fide* specifics, and these by accident; who see, further, that diseases are most easily cured by removing their efficient causes; who maintain that the true study of diseased action lies in the true study of life and its phenomena; who appreciate the fact that diseases of all kinds are nothing more than modified physiological conditions; and who, in practice, feel that, as with one or two exceptions, medicines are only specially useful in removing or relieving the special symptoms of a disease, so any disease itself, as a whole, is removable by the removal of the general influences which gave it birth, and by no narrower process or practice."

Again:—

"For my own part, I believe in no specific for consumption, although I believe fully in the invaluable qualities of some few medicines, when these are simply applied, are made to assume the character of foods as far as it is possible, or are directed, on physiological grounds, to the abatement of certain symptoms."

The medicines to which the author is disposed to attach especial value, in accordance with his experience in the Royal Infirmary for Chest Diseases, are,—fish oil, with quina and iron; opium, to alleviate suffering, to assuage cough and induce sleep; and gallic acid in full doses, for the purpose of arresting hemoptysis and night perspirations. He reports favourably of the practice of oil inunction, at least in the few

cases in which it was used; while he eschews the employment of counter-irritation altogether.

The work concludes with a very excellent chapter on the important subject of ventilation. In it (chap. vii.) are embodied several facts which may be useful at first sight; it is intended, moreover, as an index to sources of further information for those who are interested in the question to which it directs attention.

On Stricture of the Urethra. By HENRY SMITH, F.R.C.S., Surgeon to the Westminster General Dispensary. London: Churchill. 1857. 8vo, pp. 280.

IT is a very pleasing task to dwell upon the contents of Mr. Smith's valuable contribution to practical surgery. No doubt, the morbid condition, stricture of the urethra, has afforded an almost exhaustless theme, and by some it may be considered that enough has been written, — for numerous indeed have been the goodly volumes published within the last few years, and much, too, in the current periodicals of the day, on this intricate and difficult subject; while names well known to science, illustrious in surgery, are closely identified with its pathology; yet we welcome the volume before us, and we shall endeavour to lay before our readers a brief account of the able manner in which Mr. Smith has accomplished his task.

The book is divided into several chapters, each containing much valuable matter for reflection. In the first chapter the anatomy of the urethra is dwelt upon in a concise and practical way. We quite agree with the author:—

"The first step towards a right knowledge of the disease, and its treatment, is a correct view of the anatomy of the part in which the affection is seated; and in no one instance of surgical disease is it more necessary to have a clear conception of the structure and relations of the parts than when the practitioner is dealing with stricture of the urethra."

In the second chapter we find the pathology of permanent stricture, followed up through its various modes of formation. First, and that most common, when it is the effect of adventitious deposit, external to the mucous membrane, "in the surrounding or connecting tissue;" but, as the author observes, although, for the most part, stricture is produced by thickening of the mucous and submucous textures,—that is, the deposit

is *outside* the lining of the canal,—the disease may consist in a deposit *upon* the mucous membrane; and he then alludes to the researches of Mr. Hancock, "who had the opportunity of examining the urethra in some who died of this disease, and he ascertained that the obstruction was caused by the deposit of an adventitious membrane upon the free surface of the mucous lining itself." Such a condition was established and truly located by the aid of the microscope.

The varieties of stricture are next considered: the simple dilatable stricture; the hard, callous, undilatable stricture; the hemorrhagic stricture; the inflammatory stricture; and the irritable or contractile stricture, to which Mr. Syme has applied the name "*resilient.*" Mr. Smith takes exception to the term on these grounds:—

"There is no doubt whatever," writes the author, "that strictures of this nature are not unfrequently met with; but it appears to me that the peculiarity in these cases depends chiefly upon the condition of the system and the temperament of the patient, and that the tendency of resiliency, or recontraction, after temporary dilatation, is merely a portion, as it were, of that irritability which is an attendant upon certain forms of stricture, for there can be no difference in the material which is deposited underneath the mucous membrane, and which forms the stricture itself."

However, we rather incline to the qualified opinion with which the paragraph concludes:—

"Still it is not to be denied that there is a certain amount of distinction between mere *irritability* and contractility; for although in the majority of cases the two are combined, it will every now and then happen that there is excessive local and general irritability when an instrument is passed through a stricture, and yet the marked tendency to contract which is sometimes observable does not at the same time obtain."

The author next dwells upon two forms of impermeable stricture:—"A stricture may be impermeable to any instrument attempted to be passed during life; but, nevertheless, there may in reality exist a channel sufficient for one to pass." This fact is illustrated by a most interesting case. In very rare cases the stricture is truly impermeable, when there is "perfect obliteration of a portion of the canal, the result of extravasation of urine and sloughing of the tissues in the perineum." An admirable example of the powers of operative surgery, in this lamentable condition, is cited from the practice of Mr. Fergusson, when more than "2 inches of the canal

had been destroyed," yet the course of the urethra was ultimately restored. The ever-existing tendency in a stricture to contract is compared to that inherent in the cicatrices occurring after burns: hence the necessity of "an opposing influence exerted in the shape of continual dilatation by mechanical means."

We quite agree with the author, that traumatic stricture is by far the most obstinate and intractable, while that produced by gonorrhœa, that seated in the spongy portion, is the most endowed with the power of contraction, consequently the most undilatable.

The various causes operating in the production of spasmodic stricture, and its several varieties, are most fairly put.

The statistical Tables, as to the seat of stricture, are highly interesting, drawn up carefully by the author from the preparations in the Museums of St. Bartholomew's, Cambridge, King's College, and the Hunterian:—

"In the specimens in St. Bartholomew's, twenty-five in number, the seat of stricture is as follows:—

1. Centre of spongy portion.
2. Two inches from orifice.
3. Just in front of bulb.
4. Bulb and membranous part.
5. Three inches from orifice.
6. One inch in front of bulb.
7. Three inches in front of bulb.
8. Bulb and membranous part.
9. Bulb.
10. Bulb.
11. Bulb.
12. Front of bulb.
13. Front of bulb.
14. Membranous portion.
15. Bulb, and in front.
16. Bulb and membranous portion.
17. Front of bulb.
18. Two inches from orifice.
19. Just in front of bulb.
20. Just in front of bulb.
21. Two inches and a half from orifice.
22. One at orifice, and just in front of bulb.
23. One at orifice, and just in front of bulb.
24. Just in front of bulb.
25. Just in front of bulb.

"In the specimens at Cambridge, eight in number:—

1. Two inches from orifice.
2. One inch and a half from orifice.
3. Just in front of bulb.
4. One inch and a half in front of bulb.
5. Just in front of bulb.
6. In bulb.
7. Bulb and membranous portion
8. Stricture throughout urethra.

"In King's College, twelve in number:—

1. Near orifice.
2. In bulb.
3. In bulb, and expansion across prostate.
4. In bulb.
5. In bulb.
6. Just in front of bulb.
7. In bulb.
8. In bulb and membranous part.
9. Middle of spongy portion.
10. Spongy portion.
11. In bulb.
12. In bulb.

"In the Hunterian Museum, forty in number:—

1. Middle of spongy portion.
2. Spongy and membranous part.
3. Just in front of bulb.
4. Just in front of bulb.
5. In bulb and in front.
6. In bulb.
7. Front of bulb and membranous part.
8. Membranous part.
9. Membranous part and bulb.
10. In bulb.
11. In bulb.
12. Middle of spongy portion.
13. Spongy portion.
14. Spongy portion.
15. Just in front of bulb.
16. Spongy portion.
17. Membranous portion.
18. Just in front of bulb.
19. Bulb and membranous portion.
20. Just in front of bulb.
21. Membranous and spongy portion.
22. In bulb.
23. Spongy portion.
24. In bulb.
25. In bulb.
26. Membranous portion.
27. In bulb.
28. Spongy portion.
29. Bulb and membranous portion.
30. Bulb and membranous portion.
31. Just in front of bulb.
32. Just in front of bulb.
33. Just in front of bulb.
34. In bulb.
35. Just in front of bulb.
36. In bulb and in front.
37. In bulb and membranous part.
38. Spongy portion.
39. In bulb.
40. Spongy portion.

"From the above Tables it will be seen that the seat of stricture is found in the membranous portion in eighteen cases,—less than one-fourth of the whole; and in all these but four, the stricture involves the bulb as well. In seventeen instances, the stricture is situated in some part of the straight or spongy portion, from the orifice to within an inch of the bulb; whilst in fifty of the specimens the disease is situated either in the bulb itself, or just in front of it. In only one instance is there stricture in the prostatic portion, and that is in the shape of a broad membranous expansion. Out of all these, the stricture is at the orifice in three cases only."

Mr. Smith concludes thus:—

"It will be seen that stricture is much more frequently met with in the bulb, or just in front of it; that it is found about equally in the membranous portion, and in the cavernous or spongy portion, at varied distances, between the orifice and an inch in front of bulb; that it occurs comparatively rarely at the orifice, and but seldom in the prostatic portion."

In contrast to the above Tables, we have drawn up one from the preparations in the Museum of the Royal College of Surgeons in Ireland, which we append here. In the main it supports Mr. Smith's views.

Specimens in Museum of Royal College of Surgeons in Ireland, thirty-two in number:—

1. Anterior to the bulb, and at orifice.
2. Immediately in front of bulb, an inch long.
3. From bulb to within an inch and a half of orifice.
4. Two inches and a half from orifice.
5. Four inches from orifice.
6. In front of bulb, and an inch and a half from orifice.
7. Long stricture; narrowest point anterior to bulb.
8. In front of bulb, and three inches behind orifice.
9. Partly in the bulb, partly in front of it.
10. Two inches and a half from the orifice.
11. Two inches and a half from the orifice.
12. Two inches from orifice.
13. Anterior to bulb.
14. At commencement of spongy division.
15. At glans, and one anterior to bulb.
16. A short way anterior to the bulb.
17. Three inches from orifice.
18. In front of the bulb.
19. In membranous portion and through bulb.
20. In front of bulb.
21. Three inches from the orifice.
22. At orifice.
23. At orifice.
24. Immediately in front of bulb.
25. In front of bulb.
26. Within an inch and a half of orifice.
27. Immediately in front of bulb.
28. Membranous part of urethra.
29. Contraction from prostate nearly to orifice.
30. In membranous portion.
31. Narrowest part, commencement of spongy portion.
32. At and in front of bulb.

The effects upon the canal itself, from stricture, are minutely investigated, and Mr. Smith looks upon the dilatation of the canal behind the stricture as "by no means of frequent occurrence;" and he arrives at this conclusion from "an examination of numerous specimens;" further, he quotes a passage from Mr. Guthrie's "Lettsomian Lectures" to confirm this view. However, by a reference to the preparations mentioned in the above Table, belonging to the Irish College of Surgeons, we shall find dilatation behind the stricture, variable in degree, characterizing many of them. It is so in Nos. 1, 2, 4, 5, 7, 8, 9, 10, 13, 14, 15, 16, 17, 20, 24, 26, 27: thus, in more than half the number we have that change so strongly insisted upon by Sir A. Cooper. We are quite aware that this dilatation does not exist in every instance; and in many, even when it does occur, it is only in a minor extent. This, too, is confirmed in practice; for we have seen some excellent surgeons endeavour to hit off the urethra by incision behind the stricture, and signally fail; yet we have cut upon it successfully in this region, both in its contracted and dilated state.

The further effects of stricture upon the canal itself are fully considered: impacted calculus, ulceration of the urethra, effects upon the prostate, perineal fistula, calcareous deposits behind the stricture; and lastly, the changes produced upon the bladder and kidneys. Mr. Smith concludes this part of

the subject by the following graphic description of the effects of stricture on the system at large:—

"I have now mentioned most of the effects of stricture as perceptible on the parts behind the urethra; as it has been seen that the disease, independent of the immediate symptoms and inconveniences attending it, produces most severe disorders in those parts which are immediately in connexion with the canal, and that these pathological changes increase in proportion with the obstinacy and persistence of the obstruction. But the mischief does not stop here; for, as the malady increases, its effects are by degrees exerted upon the general system, and all the important functions of the body become impaired. As the urine is continually obstructed, it accumulates in the bladder, and becomes decomposed; the kidneys are changed from their integrity, do not eliminate the component parts of the urine from the blood in sufficient force, and thus the blood itself becomes, as it were, poisoned; the patient gets into an irritable condition, becomes thin, loses his appetite, and being at the same time constantly tormented with the desire of making water, and harassed by the pain attending it, he loses his sleep, and soon becomes an object of the greatest commiseration. There is now an increased liability to congestion of the internal organs, and, above all, there is a tendency for the brain to become affected; and when death does ensue from the effects of stricture, the mode of dying is not unfrequently by coma."

Careful allusion has likewise been made to the effects of stricture upon the testicle, upon the veins and mucous membrane of the rectum, and finally, the most serious consequence, rupture of the urethra.

In the third chapter, the symptoms and causes of stricture are minutely investigated, while the eight remaining chapters are dedicated to the several modes of treatment.

"In consequence," writes Mr. Smith, "of this disease being chiefly a mechanical one, as it were, the treatment must be mainly mechanical, although it will be found that it is highly necessary to combine other measures with the employment of instruments."

These modes of treatment are very properly divided under three heads: dilatation, cauterization, incision. Of the *first*, there are three modifications: simple dilatation; permanent dilatation; rapid or forced dilatation. Of the *second* there are two methods, or rather the employment of two different substances, viz., nitrate of silver and potassa fusa. Of the *third*, under the comprehensive term, incision, the author lays down several varieties which are practised by the surgeons of the present day:—
1st. Internal incision, performed either from before backwards,

or from behind forwards. 2nd. Incision of the stricture from the outside, or perineal section, of which proceeding there are also two varieties: first, the section at the point of an instrument which cannot be passed through the stricture; and secondly, the section performed upon a grooved instrument previously passed along the urethra. For the furtherance of these several methods, the necessity for certain general measures is strongly insisted on, as well "as an acquaintance with those remedial agents which are powerful adjuvants in the treatment of stricture."

In speaking of the instruments used in dilatation, Mr. Smith gives a preference to the wax bougie.

"Although I have seen," writes this distinguished surgeon, "a large number of strictures treated by means of curved metallic instruments, and am aware that the majority of surgeons use them, I have become impressed with the efficiency and safety of the simple *wax* bougie, and am in the habit of treating cases with this instrument; and I am convinced, from what I have seen, that were it more frequently employed, patients would suffer less than they do, and that a speedier cure would be effected in certain troublesome cases."

And a little further on—

"That the actual and immediate dilatation of the urethra will, in a great number of cases, be more limited and less rapid, cannot be denied; still, it is my opinion, from what I have observed, that although, a*pparently*, time may be lost by using the wax bougie, in reality the course of treatment is rendered shorter, because the use of the wax bougie is not accompanied with that irritation which so frequently obtains when metal instruments are employed, and thus it is not necessary that the treatment should be suspended. On the other hand, if the surgeon has a bad stricture to deal with, and examines the urethra with a curved metallic instrument, it happens not unfrequently that he is not able at first to hit the orifice of the stricture, and several attempts are perhaps made, with more or less force, before the instrument can be introduced into the stricture. I have often and often seen this happen in the hands of very competent surgeons. The consequence of this is, that if the urethra is irritable, the patient suffers a great deal; bleeding takes place, and there is considerable pain, and it will last for hours and days, so that it will be useless and hurtful to repeat the attempt to pass the instrument for some time. In some of these cases, when it cannot be got through the stricture, I believe the lining membrane of the urethra is lacerated."

In the main, we have no doubt that Mr. Smith is right, and if such ineffectual efforts are persisted in, the constitution

will resent it by rigors, fever, and other troublesome symptoms. Yet we have great confidence in the use of metallic instruments, when directed by a light, gentle hand. The gutta percha bougie, though extensively used by the French, meets with no peculiar commendation from the author; nay, an interesting case is recorded from the practice of Mr. Fergusson, where he performed the operation of lithotrity, and where the foreign body proved to be the end of a gutta percha catheter, covered with deposits, which had been broken in the passage some twelve months previously. We entirely agree with Mr. Smith, and consider that instruments made of this material cannot be depended on; in more than one instance we have had to extract from the urethra broken-off portions, and on two occasions to lay open the part for the removal of the fragment. We strongly advise both practitioners and students to study the admirable directions given by Mr. Smith as to the selection of an instrument, and the mode of procedure altogether when temporary dilatation of the urethra is decided upon; the subject is handled in the most masterly manner. A large number of interesting cases are introduced, each tending to enforce the practical lesson inculcated.

According to the author, there are three forms of stricture, which, under certain circumstances, may be treated by permanent dilatation. The first, that in which the stricture has existed for a long period, and is so tough and resisting that dilatation cannot be effected in any reasonable amount of time; such being especially troublesome to treat by temporary dilatation, when it is seated in the spongy portion of the urethra. The second condition is when the same kind of stricture exists, the cause of the malady being the result of a wound. The third form to which permanent dilatation is applicable is that to which the term *resilient* is applied by Mr. Syme, its chief characteristic being, that it is extremely irritable, and has a great tendency to recontract after an instrument has once been passed through. The accidental circumstances rendering it desirable to pursue this mode of practice are likewise dwelt upon by Mr. Smith, and most interesting cases given confirmatory of the salutary effects of the procedure. The two methods of permanent dilatation are given,—the '*dilatation permanente lente*' and the '*dilatation permanente rapide*' of the French. The untoward results which sometimes follow on this line of treatment are not held back, and we may add, in its adoption great watchfulness is necessary: we have seen the urethra slough after the application of the instrument for a few hours. The chapter on this subject is concluded with the following wholesome precept:—

"The grave objection to rapid dilatation is, that there is a chance of producing irritative spasm and bleeding in the urethra; and that, even after the stricture has been pretty well dilated, there is so great a tendency in the part to assume contraction; and I believe it may be looked upon as a truthful maxim, that the more rapidly a stricture is dilated, the sooner is recontraction likely to occur."

The seventh chapter, which treats of the management of strictures by caustics, is most admirably arranged; in every page there is practical matter, that redounds greatly to Mr. Smith's fame,—a careful perusal of it will amply repay the surgeon most busily engaged in active practice.

The treatment of stricture by division with the knife is largely entered into, and the cases to which it is applicable; and illustrations are given; the instruments required, and the operative procedure suitable after each method, are minutely described. The operation with which Mr. Syme's name is associated—division of the stricture upon a grooved staff—is dispassionately and truthfully considered, and Mr. Smith, in commencing his observations on the subject, thus sensibly writes:—

"Much angry contention has arisen in reference to this plan of treatment—into this it is not my purpose to enter; but having had several opportunities of witnessing this plan of treatment, I shall truthfully record the result of these observations, and shall draw my conclusions from the cases which will be mentioned."

Two cases are given where the operation was performed according to the directions laid down by Mr. Syme, and where the measure was "justifiable and suitable." In the first case, writes Mr. Smith,—

"A cure was to all appearance made, and this happy state of things lasted so long as the patient took the precaution of passing a bougie now and then; but upon his omitting this, his malady gradually returned, and his sufferings became similar to what obtained before. Nevertheless, a timeous recourse to dilatation put him right again, and this gentleman remained in capital health for some time to my knowledge."

Still, continues Mr. Smith,—

"A most striking fact is shown by this case; this is, that the external division of a stricture cannot be considered or depended upon as an *effectual* remedy by itself, and that, sooner or later, the disease will return, unless the precaution is taken to keep up occasional dilatation."

In the *second* case,—

"Temporary relief, and that too of a striking character, was experienced after the operation; but, as time elapsed, the symptoms returned; and the fact of the wound in the perineum reopening showed that the morbid condition had not been removed."

Still I must add, says Mr. Smith,—

"That the habits of this patient were unfavourable to recovery, for he drank freely, and committed other excesses."

Another case is given from the practice of Mr. Fergusson, where there were stricture and fistula combined. Mr. Smith's remarks upon the case are as follows:—"Now, in this instance, it cannot be doubted that the perineal section entirely failed in effecting the object sought." The symptoms were, however, relieved for a time; but writes Mr. Smith,—"This amelioration was of short duration; the malady returned with its former violence, and in the end the patient went away as bad as ever." It is but fair to add, however, that Mr. Smith did not consider this a favourable case for any operative proceeding. A fourth case is given where death followed *from* the operation. A fifth case is taken from the "Lancet," which was operated on by Mr. Coulson, and death followed from phlebitis. Mr. Smith's remarks upon this case, as applicable to perineal section, are so apposite that we shall transcribe them:—

"Here is another instance of death after the operation, the immediate cause being that which might obtain after any cutting operation; and it is not a matter of any surprise that phlebitis should occur after a proceeding where so vascular a tissue as that of the urethra has been cut into, and a large surface is left exposed which is being continually liable to irritation and inflammation from the urine coming in contact with it. Thus it would not be surprising if phlebitis were to occur frequently after the perineal section."

A very truthful analysis of this question has been entered into by Mr. Smith. He pledges himself to this, and the reader will learn how confidently he may rest upon his judgment:—

"Since the introduction of the operation by Mr. Syme," writes Mr. Smith, "there has been so much discussion among various members of the profession upon the merits of this proceeding, that the question as to whether the operation is either justifiable or beneficial is by no means settled, and it is not easy to come to any correct conclusion relative to the real merits of this means of treating stricture, because the parties who have discussed it have shown too much personal feeling, each one denying the statements of the

other, and thus almost entirely leaving the profession in the dark. This should not be so, especially as the question is a most important one, as affecting the safety and comfort of many individuals who suffer under the most severe forms of stricture, and as the remedial measure itself has been so strongly recommended by a surgeon of great repute."

After dwelling upon the cases already mentioned, Mr. Smith continues:—

"I have, however, lately seen a case which proves more impressively than the one just quoted that the operation of external section upon a grooved staff is not to be depended upon as a cure, and that a return of the disease and all its sad symptoms may be looked for even within a brief period."

Next follows an admirable example, likewise from Mr. Fergusson's practice,—the case comparatively recent (January, 1857),—where all the bad consequence of stricture returned as forcibly as they existed before the operation. An objection strongly urged against this operation rests in the fact that fistula often remains after the operation. A case is adduced, absolutely from Mr. Syme's own practice, to prove this assertion; and for others the reader is referred to Mr. Lizars' work on Stricture, published in 1851.

Death occurring after the operation is likewise ably remarked upon by Mr. Smith, and not long since he lost a patient from diffuse inflammation after its execution. The dangers of hemorrhage are next considered, and we shall let Mr. Smith speak for himself:—

"It seems, *a priori*, somewhat remarkable that it has never occurred to me to witness any uncomfortable amount of bleeding during or after the operation of cutting down upon the point of the catheter, and I must have witnessed nearly *twenty* cases in which it was done; whilst, on the contrary, I have known hemorrhage take place to an alarming and great extent, on more than one occasion, after Mr. Syme's operation. I think it may be accounted for in this way:—In most of the cases where the old operation was effected, the disease was of very long standing; the urethra had become converted into a hard, callous cord, as it were; the parts around the canal were in a great state of disease, the tissues being infiltrated, thickened, and indurated. In this change of texture the blood-vessels themselves must have participated: many of them, and especially the larger ones, had probably become partially blocked up; and thus, when divided, they did not pour out much blood. And, moreover, I have noticed, when the incisions are made through the indurated tissues of the perineum, that at first the divided vessels

bleed freely, but that they in a short time cease throwing out blood."

A case is next related by the author, showing that hemorrhage is of formidable reality. The whole management of this difficult case stamps the author as a surgeon of sound practical character, rich in resources according to embarrassments.

Finally, from a grave consideration of the subject in its entirety, the able author arrives at the conclusion—

"That the operation does not always what its promoter so strenuously affirmed,—'accomplish quickly, safely, and surely, what has resisted all the prolonged, complicated, and hazardous procedures which ingenuity has devised or patience endured.'"

And again:—

"It has fallen to my lot to have under my care cases which answer the description of those related by Mr. Syme, and which have been operated upon by him and other surgeons; but it has appeared to me to be unnecessary to subject a patient to an operation which may destroy life, unless a very pressing emergency exists; and this, in my opinion, does not obtain—except under rare circumstances—so long as an instrument can be passed through the stricture."

But we cannot enter further upon the subject at present. The last chapter treats of spasmodic stricture, retention of urine, and the treatment applicable according to the exigencies of the case. We may faithfully say the work has been well executed, and it is with an agreeable satisfaction we direct the attention of our readers to the valuable details so modestly set forth in it: none but a practical surgeon, one well up to all the minutiæ of this comprehensive subject, could have produced the work for which the profession is indebted to Mr. Smith. To the student it is a safe guide, as an epitome of all the modern views upon the subject of which it treats; to the practising surgeon it is invaluable, as bearing many practical hints which will assist him in his difficulties; to any one conversant with the subject of stricture of the urethra, and its numerous complications and fearful attendant symptoms, the value of the work will be at once apparent. The name attached to the volume is almost a sufficient guarantee for its intrinsic merits, as every one conversant with the improvements of modern surgery will freely admit; and we most heartily congratulate Mr. Henry Smith on having added this new laurel to those which he has already earned.

1. *Studier i Bråckläran.* Af Dr. Carl Benedict Mesterton, Chir. Docens vid Universite i Upsala.

   i. *Om Radicaloperation för Ljumskbråck* (*Med en planche*). Stockholm: J. and A. Riis. 1857. 4to, pp. 100.

   Studies of Hernia. By Dr. Carl Benedict Mesterton, Lecturer on Surgery in the University of Upsala.

   i. *On Radical Operation for Inguinal Hernia* (with a Plate).

2. *Bidrag till läran om Emboli.* Akademisk Afhandling. Af Albert Lindström. Lund. Berling. 1856, 8vo, pp. 69.

   A Contribution to the Theory of Emboli. An Academic Thesis. By Albert Lindström.

3. *Föreläsningar i Medicinens Historia*, hållne af J. W. Broberg, Bibliothekarie vid Kongl. Carolinska Medico-chirurgiska Institutet. Första Serien. Stockholm: Norstedt och Söner. 1856. 8vo, pp. 56.

   Lectures on the History of Medicine. Delivered by J. W. Broberg, Librarian to the Royal Carolinean Medico-chirurgical Institute. First Series.

4. *Berättelse om Sjukvården vid Kronprinsessan Lovisas Vårdanstalt för Sjuka Barn år* 1855. Afgiven af Professor Gust. von Düben, Andre Läkare vid Vårdanstalten. Stockholm: P. A. Norstedt och Söner. 1856. 8vo, pp. 62.

   Report on the Care of the Sick in the Crown Princess Louisa's Institution for Sick Children for the year 1855. By Professor Gustaf von Düben, Second Physician to the Institution.

5. *Handbok för Artilleri-Befälet.*

   Manual for Artillery Officers. 12mo.

6. *Om några väsentliga Fel i Barnauppfostran, och om det uppväxande slägtets fysiska försämring, samt behofvet af gymnastik, såsom ett upprättelsemedel. Föredrag vid Pedagogiska Föreningens årshögtid den* 21 *Maj* 1856. Af Dr. Herman Sätherberg. Stockholm. 1856. 32mo, pp. 21.

On some Essential Defects in the Education of Children, and on the Physical Deterioration of the Rising Generation, and the Necessity of Gymnastics as a Restorative Agent. An Address delivered at the Annual Festival of the Educational Association on the 21st of May, 1856. By Dr. Herman Sätherberg.

1. Radical operation, or operation for reducible hernia, is defined by Dr. Mesterton to be a suitably executed surgical proceeding, the object of which is such a closing or contraction of a hernial passage that the intestines can no longer escape through it from their proper cavity; and he states the design of his present investigation to be to ascertain whether, and in what degree, a radical cure of rupture is possible, what we are justified in expecting from a judicious so-called radical operation, and how far the modes of proceeding now in use are capable of satisfying our requirements.

In former times, when the anatomy and pathology of hernia were little understood, when surgeons consequently were neither acquainted with, nor would venture on, any operative interference in the case of a patient who was brought by incarceration of hernia into immediate danger of life, and when palliative appliances in cases still reducible were much less perfect than they are in our day, the necessity of radical cure was, of course, more strongly felt than it is in the present advanced state of surgical science. The author gives a lucid and agreeably-written history, divided into three periods, of the means which have from time to time been devised with the view of attaining this object. We can do no more than follow him through the heads of his interesting account.

The more ancient history of the radical operation comprises, properly speaking, only two different principal methods, one by cauterization, the other by ligature or suture. The former is divided into that by means of the actual cautery, and that in which potential caustics were employed.

The chapter on the method by ligature is divided into five sections, treating respectively of the most ancient plan described by Paulus Ægineta; of that adopted by the itinerant operators of the thirteenth century, who castrated for all ruptures, the accompanying cauterization or ligature being considered as merely accessory; of the punctum aureum; of the sutura regia; and of the more modern method, in which the isolated hernial sac was tied, with or without excision of the same below the ligature.

To the second period, when surgery, and especially the

knowledge of hernia, had attained a position at the same time more scientific, and more in accordance with the principles of humanity, and, therefore, characterized by a regard for the preservation of the generative faculty, and, at least in the majority of instances, by a laudable desire to avoid or diminish the dangers attendant on the old modes of operating, belong the methods by incision and by injection. The method by incision was adopted in consequence of its being observed that a radical cure often followed the operation for strangulated hernia; the necessary degree of inflammatory action was sought *by the introduction of foreign bodies into the wound.* Peter Dionis, who died in 1718, was the first to try this method, and J. Mery and Arnaud successfully followed his example. Others endeavoured, in a milder way, to induce a sufficient degree of inflammation by scarifying the abdominal ring or the neck of the hernial sac. The method by injection was introduced by Schreger, in consequence of seeing a hydro-enterocele completely cured by the injection of red wine into the common serous sac. Tincture of iodine has since been employed by Velpeau and Jobert de Lamballe, tincture of cantharides by Pancoast, and the patient's blood by v. Walther. This method is not only attended with difficulties and considerable danger, but is imperfect in its results.

After devoting a section to the plan of obstructing the hernial canal with an organic plug, the idea of which was first suggested by Garengeot, the author passes to the consideration of the proceedings, the invention of which, during the last twenty years, has again attached a more general interest to the operative treatment of reducible hernia. Of these the first mentioned is Belmas' method, founded on the observation that certain animal substances, as gelatine and goldbeater's skin, brought into contact with a serous canal, produce in it a plastic exudation formed during the course of a gentle and completely local inflammation, while the foreign bodies are themselves absorbed. Bonnet's plan, proposed in 1836, is next described, consisting in passing needles through the base of a fold of integuments raised over the abdominal ring, and including the hernial sac, and thus bringing the walls of the neck of the sac into contact with each other, with the intention of effecting their adhesion by means of the inflammation excited by the needles.

The third plan considered in this portion of the work is Gerdy's method by invagination. Wutzer's modification of which is stated by the author to be the form which has been tried upon the greatest scale, and has afforded the best results. This

method is already before the English reader, having been fully described by Mr. Spencer Wells in the thirty-seventh volume of the Medico-Chirurgical Transactions[a], according to whom it has been employed twelve times by English surgeons, viz.:— six times by himself, three times by Jones of Jersey, and once each by Burmester (in Malta), Stretton and Cooke, and fifty-seven times in Germany. The only case in which this modification of the invagination method was followed by a fatal result occurred, according to Mr. Wells, in Brussels, but the patient was in bad health at the time, and the operation was unskilfully performed.

The author next alludes disapprovingly to Velpeau's subcutaneous scarification of the neck of the hernial sac, and with more favour to Mösner's seton applied in the inguinal canal *external* to the neck of the sac.

Reviewing the entire subject of the method by invagination, Dr. Mesterton concludes that it affords a prospect of a perfect radical cure in all cases where the hernial passage still retains the shape of a canal and is not extraordinarily wide, and where a hernial predisposition either does not exist or is little marked; and, in the latter case, where the disposition is evidently acquired and dependent on external circumstances, as profession, mode of life, &c., which can be altered, and where the patient has not yet passed the period of growth; and, secondly, that in all other cases, either only a temporary cure can with certainty be reckoned on, or only more or less improvement can be attained: for example, diminution of the hernial openings, and the possibility or greater certainty of retaining the hernia with a bandage; the author thus, as he himself observes, takes a middle position between the opposite parties into which the profession is at present divided upon this subject. Dr. Mesterton concludes this portion of his work with a recapitulation of the circumstances which should be favourable to the adoption of operative interference in hernia, as well as of the conditions which should be considered to contra-indicate such a proceeding. An extensive bibliography is added; and a plate is given, representing the parts concerned, and several of the instruments which have been employed in the operation by invagination.

This first of Dr. Mesterton's "Studies of Hernia" exhibits great research, and a thorough acquaintance with the subject he has taken in hand. The essay is written in a lucid and in-

[a] An abstract of Mr. Wells' paper may be found in the Medical Times and Gazette for November 8, 1856, p. 471.

teresting style; and should the remainder of the series be equally well executed, as we have no doubt will be the case, the entire will form a standard work upon the important subject of which it treats. The style of publication is in accordance with the excellence of the author's part of the work.

2. Hr Lindström's Thesis presents a comprehensive view of a subject which has, on more than one occasion, been before our readers in the pages of this Journal. It is considered under the heads of its literature; its history; of emboli in general; of emboli in the pulmonary artery, and its subdivisions; of emboli in the arteries of the brain; of emboli in the large arteries of the extremities; and of emboli in the visceral ramifications of the aorta abdominalis; and of capillary emboli.

3. With the office of Librarian at the Royal Carolinean Medico-Chirurgical Institute, Hr Broberg undertook the duty of delivering, at the close of each Spring Session, a course of lectures on Medical History and Bibliography. The first series, now before us, does not extend further than to the time of Galen.

4. In our twenty-first volume we noticed at some length Baron von Düben's First Report of the Hospital recently established in Stockholm for the Diseases of Children: we have now before us, from the pen of the same zealous physician, the Report of the Institution for the year 1855. The changes in the arrangement of the hospital during the year have been but few, consisting in the addition of one to the staff of nurses; colouring the floors of the wards in oil, to facilitate cleanliness; and the establishment of a drying-room at the top of the house. The admissions for the year, including 28 patients remaining in the house from 1854, have been 183; of these, 37 died, and 32 remained in hospital at the close of the year. The average daily number in the house has been 31·5; the average stay of each patient in the house was 63,—the maximum 341 days, the minimum 2 days. Experience showed the impossibility of restricting the admissions to children between the ages of six and eight; accordingly, 11 were admitted under the age of one year, and 38 at between one and two years. The condition of the hospital as to epidemics was, during the year, good. In the course of 1854, 7 children were admitted with hooping-cough, and were placed among the other patients without any of the latter taking the disease. At the close of the year there was no patient in the house affected with hooping-cough, nor did

any case of the kind occur until the 20th of February, on which day a girl, who had been admitted on the 14th of December for disease of the hip, and who had now suffered for some days from tracheo-bronchitis, was observed to whoop: 21 children, all admitted for other diseases, subsequently took the cough. In the beginning of September the epidemic had ceased. Of these 21 cases, 1 terminated fatally.

Of the epidemic cholera prevalent in the city, 6 cases occurred in the hospital, 5 proving fatal in children admitted for other diseases; diarrhœa, however, existing in 2 at the time of admission. Of these 5 children, 3 had been placed, one after the other, on the same bedstead,—which was constructed entirely of iron,—but with different bedclothes, in the ward for contagious diseases: 1 patient, subsequently admitted with cholera, recovered. These cases all occurred in the month of September, and on them the author makes the following remarks:—

"If this outbreak of cholera deserves the name of epidemic, it must be considered to have taken place without contagion, for, during the whole of the portion of the year prior to September, no patient was admitted with symptoms capable, under any circumstances, of being designated as choleric. In point of time, the cases which occurred in the hospital took place at intervals of 4, 8, 5, and 17 days, calculating between the day of the death of one patient to that of the sickening of another. The space of time last mentioned seems to be a rather long period of incubation. In all these cases the shortness of the premonitory period—sometimes not exceeding a couple of hours—and the violence of the disease, which did not appear to be in the slightest degree influenced by treatment, were remarkable.

"In autumn, contemporaneously with the cholera, occurred an epidemic of varicella, lasting from the 4th to the 25th of October, and affecting seven children. In December there were four cases of slight tracheo-bronchitis, and two of pneumonia.

"The hospital has thus, taken on the whole, suffered in a very slight degree from severe epidemic influences, and the diseases mentioned in the former yearly Report, as probable results of crowding together, have fortunately been absent during the past year."

The author adds tables of the diseases affecting the patients who were dismissed during the year, or remained over in the house to 1856; of the anatomical changes observed in 24 children whose bodies were examined after death; and of the

diseases diagnosed in 13 children who died, but were not subjected to post-mortem examination. We think a synoptical table of the apparent causes of death in all the fatal cases would be a desideratum in his future reports, as under the present arrangement it does not immediately appear to what the very high mortality, which, we may observe in passing, is greater than in 1854, is chiefly to be attributed. Valuable remarks are appended to Tables I. and II.; and we consider that the annual Reports of the Crown Princess Louisa's Institution for Sick Children, as published by Baron von Düben, will form a most important addition to the literature of infantile diseases.

5. The fifth work on our list is the hygienic and medico-chirurgical portion of a succinct and neatly got-up manual for the guidance of those who are intrusted with the care of troops.

6. Dr. Sätherberg commences his Address with a serious charge against those to whom the education of the now rising generation of Sweden is intrusted, that ignorant of the intimate connexion between mind and matter, body and soul, they utterly neglect the physical training of their pupils; and he states that in consequence the Swedish youth are to be described as "of weakly form, fleshless, bloodless, half extinguished, old-visaged;" a wretched picture of the subjects of him who boasts to be King of the Goths and Vandals, and descriptive of unpromising materials to supply successors to those victorious hosts who, a century and a half ago, were more than a match for the united efforts of Denmark, Poland, and Russia.

The author next deprecates premature forcing of the intellect, and in reference to this portion of the subject quotes Salzman's apothegm:—"Make thy children wise betimes, and they will quickly become fools."

Dr. Sätherberg considers that judiciously employed gymnastic exercises will have a most beneficial influence upon children's studies; but in advocating these he appends the salutary caution that, while it is easy with their aid to strengthen children, it is also easy by the same agency to injure them. Of the truth of this there can be no doubt, and we are convinced that many have by such means produced an abnormally developed and powerful condition of the muscular system, at the expense and to the serious injury of the more vital organs.

Varied as are the subjects of the works with which the diligence of our Swedish colleagues has supplied us during the last few weeks, the number of their contributions has been so

great that we have been obliged to consider them together. As usual, these contributions afford evidence of the sound judgment, energy, and acquaintance with the progress of science in other countries observable in the majority of the works which reach us from the same quarter, and which render the task of the reviewer a pleasing duty.

A Catechism of the Medicine and Surgery of the Eye and Ear, for the Clinical Use of Hospital Students. By T. Wharton Jones, F.R.S., &c., &c. London: Churchill, 1857. 12mo, pp. 131.

The Ophthalmia of Ireland: its Nature, Effects, and Treatment. By John Williams, A.B., T.C.D., &c., &c., Surgeon to the Cork Eye Dispensary. Dublin: Fannin, 1857. Pamphlet, pp. 44.

The first of these little works on ophthalmic subjects is, what it professes to be, a mere catechism of the medicine and surgery of the eye and ear, and will be found useful as a guide and help for the student of ophthalmic and aural science. In the form of concise questions and answers, it embodies the principal practical matters appertaining to eye and ear disease, and very clearly defines the many often perplexing terms which have relation to these affections. It should be in the hands of every hospital student, and we most strongly recommend the observations contained in the preface to the work to the serious consideration of every one who undertakes the solemn responsibilities of the healing art. We have repeatedly expressed similar sentiments in this Journal, and we now most cordially endorse every one of those so ably put forward by the distinguished author in the following words:—

"In general practice, cases of disease of the eye are always occurring, and many of them are so dangerous to the sight that the most prompt treatment, including the observance of numerous special details, is necessary to save the patient from blindness. It is not by looking on occasionally at operations, that a student will gain the knowledge of the diagnosis and treatment of the diseases of the eye, necessary to qualify him for practice; he must watch case after case, and that throughout their whole course. Unless a student takes the trouble thus to make himself familiar by observation with the various eye diseases, as they present themselves, and the effects of remedies on them, he will, when he comes to practise for himself, run the risk of allowing a case of ophthalmia neonatorum to run on to the destruction of the cornea; or, by failing to distinguish a case of iritis, which requires active general treatment, from one of ca-

tarrhal ophthalmia, in which local applications are so necessary, he will probably find, after a great expenditure of eye-water, drops, and ointment, the inflammation not only not cured, but the sight of his patient seriously injured by obstruction of the pupil with lymph. By such disastrous experience the young practitioner will, when it is too late, be made sensible of the error he has committed in neglecting the opportunities for the study of eye diseases which his hospital afforded.

"Let not the student suppose that, because he may have been diligent in acquiring a knowledge of other departments of medicine and surgery, he is at once competent to undertake the management of any of the diseases of the eye, without having previously paid any special attention to the subject. Although the elementary forms of disease be the same in all organs, still, in consequence of the different purposes the different organs may have to serve in the economy, their parallel or corresponding diseases may prove to be very different in relative importance and ulterior effects. That the relative importance and ulterior effects of the elementary forms of disease in the eyes must be quite peculiar, will be at once evident, if we call to mind the nature of these organs in respect to particular structure and function.

"It must, then, be by special clinical observation and study alone that the student can acquire that tact and acquaintance with detail by which he will be enabled to make successful application of his general knowledge in particular cases of ophthalmic disease."

The preceding observations should be attentively read and laid to heart by every one who enters upon general medical practice, and who desires to perform his responsible duties faithfully to the public, and with credit to himself.

We now come to notice briefly the *brochure* of Dr. Williams on the "Ophthalmia of Ireland." This little work, it will be seen, treats of a disease which has frequently been referred to in the pages of this Journal. Dr. Williams regards it—

"As a conjunctival inflammation, differing in degree only from the ordinary catarrhal form, which, from its prevalence among the peasantry of Ireland, but particularly the destitute inmates of workhouses, daily forces itself on our attention, and which, from the peculiar effects by which it is almost universally characterized in those classes, he has named '*the Ophthalmia of Ireland.*'"

Again, he says:—

"Exposure to cold may be regarded as a *proximate* cause, and, from close observation, I have concluded, that want of *covering for the feet*, which too frequently is a secondary consideration, and in many cases is regarded rather an incumbrance, operates more powerfully in the production of this disease than any other exciting cause;

and I feel convinced that, if the guardians of the poor adopted adequate measures to obviate this *evil*, the number of inmates of workhouses who are, from the effects of chronic ophthalmia, left a burthen upon their country, would be speedily and materially reduced."

In our opinion, there are many other causes besides "want of covering for the feet" which excite the disease in question, and there are greater "evils" to be remedied, not only in our workhouses, but in our general social system, than this barefooted misfortune! We fear that want of wholesome food, inattention to cleanliness, exposure to the foul air of smoky cribs, and residing in unsewered localities and in badly ventilated dwellings, are "evils" greater than naked feet; and that some of the same causes, combined with over-crowding our workhouses, contribute, more than the want of shoes and stockings, to produce the large amount of eye disease, especially chronic conjunctivitis, which prevails in Ireland, or, we may say, wherever the lower orders of the Irish "most do congregate." The author, we must admit, has not overlooked these other exciting causes; but he seems to us to lay rather much stress upon the "*evil*" of bare feet.

Dr. Williams has evidently seen a good deal of this prevalent affection, and pretty accurately describes the various forms of conjunctival inflammation by which it is usually preceded; while he gives a very vivid picture of the disease in its worst form, when the conjunctiva has become hypertrophied and almost completely changed in structure, and when the cornea has become thickened and opaque.

The treatment which he recommends is the usual routine laid down in "the books," and is judicious enough, only that he seems to have forgotten the most essential, namely, strict attention to those sanitary observances without which every remedy—internal drug or local application—will fail; the eye douche, too, he does not mention, though there cannot be any question that its use, either with cold or tepid water, or with some sedative or stimulating collyrium, such as the case may require, is of vast advantage in almost every form of chronic disease of the conjunctiva and cornea.

We cannot conclude our observations on Dr. Williams' pamphlet without expressing our surprise that the author—an Irishman practising in Ireland—should have altogether omitted to mention the names or refer to the writings of the two distinguished oculists of our city, Dr. Jacob and Mr. Wilde, who, as he must be aware, have frequently written on the very subject of which he treats. He surely cannot expect that by ignoring all they have contributed to ophthalmological science, he is qua-

lifying himself to take the place of either. Will he also plead ignorance of the writings of Mr. Browne, of Belfast, which have so frequently appeared in our pages? While such disingenuousness, on the part of the author, demands our severe reprehension, our critical candour enables us to recommend his essay to the notice of our brethren, and to the serious attention of the medical student, who, in its pages, will find much useful information regarding a prevalent and intractable disease.

On the Urinary Secretion of Fishes; with some Remarks on this Secretion in other Classes of Animals. By John Davy, M. D., F. R. SS. L. and E., &c. Reprinted from the Transactions of the Royal Society of Edinburgh. Edinburgh: Neill and Co. 1857. 4to, pp. 6.

When we first read the above title it struck us that it was particularly fitting that the brother of the illustrious author of "Salmonia" should turn his attention to the history of the finny tribe; Dr. Davy's high character in the scientific world does not, however, rest on any accidental circumstance of family or kindred, and we gladly receive each fresh addition to our knowledge emanating from his pen, as the contribution of a philosophic and deep-thinking mind.

In the interesting memoir before us, Dr. Davy has entered on a subject which, with him, we believe to be as yet almost untouched,—the only observation on it we recollect to have seen being a statement by Berzelius, that the urine of fishes contains uric acid[a]. That this should be so, in the present day of active inquiry, we also are inclined to attribute to the causes he assigns,—"the nature of the element inhabited, the peculiarities of the urinary organs, the difficulty of collecting the matter voided, and its having no well-marked distinctive qualities obvious to the senses."

The fishes examined by Dr. Davy in search of their urinary secretion were,—"the salmon, sea-trout, charr, common trout, pike, and perch; the skate, ling, conger, cod, pollack, haddock, turbot, bream, and mackerel."

"Of these, the salmonidæ, pike, perch, ling, and ray, have a small urinary bladder, and, in all but the last, communicating directly with the kidneys. In the last mentioned, the ray, the com-

[a] Traité de Chimie, par J. J. Berzelius, traduit par Me. Esslinger. Paris: Firmin Didot, Frères, 1833. Tom. vii. p. 393.

munication appears to be indirect, after the manner observable in some of the batrachians, in which the ureters terminate in the cloaca.

"The other fishes named seem to be destitute of a urinary bladder, or, if possessed of one, it was so small as to have escaped observation. The ureter in these, when distinct, was found to terminate near the verge of the anal aperture: in several instances it was so large and dilated as to serve the place of a bladder."

In the urinary bladder of the salmonidæ, so small as to be little more than rudimentary, Dr. Davy never discovered any fluid collected. That of the perch is larger, and internally plicated and spongy, and has been found to contain a fluid. The viscus in the pike is very small; in the ling it is comparatively large: from the bladder of one of this species—a fish of four feet in length—about a drachm of nearly colourless fluid was obtained.

Of the fishes destitute of a urinary bladder, the ureter, in the instance of the haddock, of the cod, of the pollack, and of the turbot, was found so capacious that it might answer the purpose of a receptacle or bladder. In each its inner surface was wet; but only in one, that of the turbot, was there any fluid collected.

From the observations he has made, including the chemical and microscopic examination of such portions of the secretion as he has been able to procure, Dr. Davy, with due philosophic caution, suggests the following conclusions:—1st. That the urinary secretion of fishes is very limited as to quantity. 2ndly. That it is commonly liquid. 3rdly. That the nitrogenous compound eliminated is variable, either urea or a lithate (the latter, probably, very seldom), or some nearly allied compound of azote.

To the foregoing observations on fishes, Dr. Davy appends some general remarks on the renal secretion in other classes of animals. He shows that while the great object of the function of the kidneys is the removal of the excess of nitrogen from the system, the nature of the secretion presents remarkable differences, which "seem to be regulated more by the structure of the urinary apparatus, or secerning vessels, than by any other circumstance:" thus in the mammalia, provided with an ample urinary bladder, the normal secretion is seen to be entirely liquid, and the principal ingredient, so far as it has yet been determined, always soluble urea; while in birds, on the contrary, and in those reptiles which, like them, are destitute of a urinary bladder—viz., snakes and lizards—invariably the secretion is

chiefly solid,—a soft, plastic solid, owing its consistence to admixture with water, and composed principally of lithate of ammonia and lithic acid.

Dr. Davy concludes his very valuable and interesting paper with a comparison between the functions of the kidneys and the lungs; the former organs being the depurators of nitrogen, as much as the latter are of carbon.

"How strongly is this exemplified in birds;—of high temperature, consuming much atmospheric air, evolving much carbonic acid; their urinary secretion also is remarkably abundant, and abounding in nitrogen. And in other classes of animals, such as insects in their several stages, such as serpents and lizards, and the hybernating ones of different classes, whether active or torpid, a like accordance, though perhaps not so strongly shown, is yet clearly observable.

"Reasoning hence, guided by analogy, might it not be expected that in the instance of fishes, inasmuch as their temperature is low, and the quantity of carbonic acid evolved small, their urinary secretion also would be proportionally small? And, granted that it is so, as the results of the experiments described would seem to indicate, does it not lead to another conclusion, viz., that subsisting, with few exceptions, exclusively on animal food, this their food, under the influence of a high digestive power, is almost entirely assimilated, and that no more is expended on the urinary secretion than is requisite to balance the small amount consumed in carrying on the aërating process? And if this be admitted, does it not help to explain some of their peculiarities,—their remarkable rapidity of growth when supplied with abundance of food, their little waste of substance when sparingly supplied, and their long endurance without loss of life, under a total or nearly total privation of aliment.

"The history of the salmon and its congeners, which of late years has been so carefully and successfully studied, might be adduced in illustration, exemplifying—1st. The great activity and power of the organs carrying on the digestive functions,—the stomach itself of the captured fish, with the parietes adjoining, being found more or less dissolved by the action of the gastric juice in the short space of a few hours, and being always found empty in the migrating fish; 2ndly. The extraordinary increase in weight during the short sojourn of the young salmon in the sea, when, without stint of food, it passes from the smolt stage of growth to that of the grilse; and 3rdly. The comparatively very slow growth of the young salmon in its parr stage during the months of winter and early spring, when its food is scarce."

We need scarcely apologize for the length of the quotations which we have made from Dr. Davy's paper; the very interesting and philosophic character of his remarks has insensibly induced us to extend them much beyond the limits we originally intended to have observed.

Phantasmata; or, Illusions and Fanaticisms of Protean Forms productive of great Evils. By R. R. Madden, F.R.C.S. Eng., M.R.I.A., &c. London: T. C. Newby. 1857. 2 vols. 8vo, pp. 504 and 508.

These volumes afford ample proof of their author's industry and research. Though we cannot subscribe to all the opinions which he has advanced, opinions involving points of faith in which we do not acquiesce, we still desire to record our high appreciation of those curious and interesting details which he offers. The subject is one not altogether new, having already, in the works of the Sydenham Society, the former numbers of the Psychological Journal, and from the pens of other writers, found exposition. For Mr. Madden has been reserved the labour of giving the most complete *resumè* of those several phenomena which constitute so many pages of sad and curious interest in the intellectual history of men, while offering to those interested in psychological studies minute accounts of their several phases, distinguished alike for the close study they evidence, and the ability with which they are arranged.

Mr. Madden, while entering with minuteness into the history of the various forms of mental disturbance, at times becomes so imbued with his subject that we almost fear he departs from that strict psychological estimate of those psycho-physical phenomena which mark the prevalence of epidemic mental disease, and is disposed to regard as realities the statements of excited minds, who with more than usual gravity detail either their inspirations or aspirations.

It would be a matter of deep interest to follow our learned author throughout his researches, which in the first volume especially are directed to investigations of epidemic forms of mental disease. We will, while reserving for a future occasion more extended observations on this subject, confine our notice, for the present, to the opinions advanced respecting Jeanne d'Arc, who fell a victim to the prevailing belief of the fifteenth century in demon-worship.

We would willingly enter into a full consideration of such circumstances in the relative position of France and England as we conceive prepared the minds of both countries for that influence which Jeanne d'Arc exercised; particularly as Mr. Madden has countenanced, if not advocated, doctrines which, without disparagement to the reasoning displayed nor the premises he adopts are, we would submit, capable of being superseded by explanations quite as tenable, and far more satisfac-

tory as being based on matters of fact rather than of opinion. We feel, however, that it would be foreign to the legitimate scope of our pages to discuss questions of purely historical interest, and shall therefore confine our notice to the following observations, from which we infer that Mr. Madden is in favour of the sentiment entertained, and advocated, as he assures us, by many writers, who affirm that Joan of Arc was possessed of supernatural powers, and must therefore be regarded as a special agent selected by Providence for the accomplishment of particular designs:—

"Previously to her captivity," writes Mr. Madden, "I am not aware of any morbid peculiarity in her mental constitution which should lead to the conclusion that her agency might not have been within the scope of Divine Providence, for the accomplishment of a design whose aim was the deliverance of a nation from a foreign enemy, and the humiliation of its oppressors.

"To come to this conclusion, it is not necessary to believe that Jeanne d'Arc had daily intercourse with saints and angels. It is only essential to believe in the justice of that design, and being of such a kind that it appeared to have been promoted by her, that her motives and actions corresponded to the exalted mission presumed to be assigned to her: that she believed in it; that the purity of her life was a guarantee for her integrity; and, finally, that she performed acts which served to attest her pretensions and powers not ordinarily given to persons of her age, sex, and condition."

Having quoted a very remarkable passage relating to Jeanne d'Arc in Grafton's Chronicle of the History of England, Mr. Madden proceeds:—

"It is impossible to read the passage that has been just quoted, and other passages to be found in the same old Chronicle, descriptive of the mighty efforts made by the Duke of Bedford to maintain the English dominion in France; and also of the pride and hauteur of the imperious Regent, the Duke of Bedford, without feeling there was nothing irreconcilable with God's Providence in the way of beating down that unbounded pride; of humbling, too, and putting an end to that insensate ambition and lust of dominion which prevailed in the English Court, and of rescuing France from the calamity that seemed then imminent, of losing its nationality, and dwindling into a province governed by a foreign power; and all this through the instrumentality of an humble, illiterate, low-born peasant-girl, with nothing in the eyes of the world to recommend her, being poor and living in obscurity, and remarkable only in a small circle, in a remote hamlet, for being good and pious, pure and simple.

"Agents of this sort have been used by Divine Providence for great purposes in all times, and in many regions of our globe; and

if we presume to inquire how it comes to pass that Providence condescends to choose its instruments among the poor and humble, the weak and unlearned, to overcome the proud and exalted, the strong and the wise in the wisdom of this world, we can only come to one conclusion, that the policy of God is not conformable to the policy of man, and that many things are consistent with the teaching of the Holy Scriptures which are not in accordance with our notions of the nature of heroic acts and human agencies. With the several Scripture records of inspiration given to women for the accomplishment of great and good designs, the history and mystery of the visions of Jeanne d'Arc may possibly be found to be in nowise inconsistent."

The passage quoted, as affording grounds for the above observations, runs as follows:—

"'This witch or manly woman, called the Mayde of God, the Frenchmen greatly extolled, alleging that by her Orleance was vitayled: by her King Charles was sacred at Reynes, and that by her the English men were often times put back and overthrowne. O Lorde, what disprayse is this to the nobilitie of France? What blot is this to the French nation? What more rebuke can be imputed to a renowned nation than to affirm, write, and confesse that all these notable victories and honourable conquests, that neither the King with his power, nor the nobilitie with their valaintness, nor the counsayle with their wit, and the commonaltie with their strength could compasse or obtain, were gotton and achieved by a shepherdes daughter, a chamberlein in a hostrie, and a beggars brat,'" &c.

We submit that there is nothing in these observations to warrant the assumption of supernatural influence.

At a period when the powers of France had been chilled by a long course of adverse fortune consequent on political immorality and ministerial incapacity; when, subdued but not conquered, the spirit of the nation, while borne down by iniquitous and impolitic English wars, still afforded evidence that, though crushed, it was far from being extinguished; when aggression from abroad, and profligate degeneracy at home, rendered France alike the spoil of her enemies and the prey of her nobles: governed by a prince who during the calamitous morning of his reign shrank from fronting the storm and strove to forget himself in pleasure, a prince who, though brave, was never seen in war, who, though intelligent, was completely governed by flatterers; with an army exhausted by civil and foreign war, and a treasury incompetent to defray the expenses even of the small force which defended the wreck of his monarchy,—France found a saviour in the enthusiasm of

a patriot maid, who, filled with glorious conceptions respecting her country, lent new spirit to the flagging energies of its people, and at length aroused them to a vigorous and successful struggle against aggressors who threatened destruction to their nationality, and to themselves that exaggeration of wretchedness which marked especially the progress of the English arms.

For the means by which she accomplished this happy result, and the special circumstances which, while giving confidence to France, conspired to enfeeble with a superstitious awe the sinews of the English, we must refer to the elaborate and very minute account the volumes before us supply. Their readers will, we trust, hesitate ere adopting, except *grano salis*, those statements which, as mere matters of record, bear evidence of the superstitions of the times, and illustrate forcibly that then, as now, the disposition prevailed quite as strongly to note as something remarkable incidents which, at the time, attracted no notice, and were not invested with unusual significance until some subsequent success set the ancients declaring they always knew than Joan of Arc would prove "a wonderful woman."

It is, if we mistake not, an admitted principle in reasoning, to first adopt, as an explanation of doubts, arguments based on premises affording the greatest probabilities, and, while they offer satisfactory solutions, to rest satisfied that we are rightly informed. True philosophy delights not in mystery. The more extensive our knowledge, the wider the sphere of our information, the less disposed we become to seek for miraculous interference as the agent producing phenomena, be they social or physical, which, even in the existing state of our information, will occasionally seem to be inexplicable. The visions of yesterday constitute the realities of to-day. The enigmas of to-day may become the common-places of to-morrow. There can assuredly be no just ground for the supposition that Joan of Arc was specially inspired, unless we fail in explaining the remarkable incidents in her life by arguments explicable to our reason, and see in the circumstances of her times events of such a nature as admit of a no less astounding solution.

It is in accordance with the doctrines of our Christian faith in all events to recognise an overruling Hand,—to believe that even a sparrow cannot fall without the knowledge of its Maker. Such confidence in the all-seeing and all-powerful will of Heaven is perfectly distinct from the sentiment which invests with supernatural agency each one who in a remarkable degree

excels his fellows, and finds in their glory or their shame evidence of a predestined career.

Joan of Arc we believe to have been one of those enthusiastic visionaries, who, reflecting on the wrongs of her country, and sustained by a sense of vivid patriotism, suffered her imagination to suggest to her judgment, and her judgment to direct her conduct, for the carrying out of designs whose success was mainly dependent on the energy displayed in their execution. We presume not to argue with Providence; but we would ask, what was there in the mutual relations of France and England to demand a messenger from Heaven or a delegate on earth? Nothing more than that which is evidenced in those several unjust, oppressive, and sanguinary wars which have, through all ages, carried fire and the sword amongst men, destroying empires and razing cities.

Joan of Arc, in performing acts not ordinarily accomplished by persons of her age, sex, and condition, is, most assuredly, not singular. Though years are presumed to bring experience, experience must not be considered as essential for success, further than, in its application to known powers, it enables a just estimate to be formed of their mutual relations. In matters of an indefinite character, when exact science fails to establish rules, that ability which commands success anticipates experiment, and so founds experience. Were it otherwise, we should be without those remarkable proofs of what has been accomplished by many at such an age as precludes the possibility of their minds being schooled by practical lessons, which, according to some, constitute the sole safeguards against failure or defeat. That the greatest feats of genius have been accomplished by those whose years had scarce reached manhood, is a fact too notorious to admit of being questioned. That women have at times led the van in matters military, scientific, and diplomatic, has been abundantly evidenced from the day that a woman rallied the energies of Britain, and vanquished the hitherto victorious arms of Rome, to this, our time, when the terrors of a Crimean campaign found one with gentle hand to soothe the fevered brow, and gentler words to glad the warrior's heart. Review the progress and examine the present position of science, sculpture, painting, literature, and those more refined arts, nay, even severer studies, in which men would fain assume preeminence, and we ask, are there no female names which stand in proud positions? What has condition to do with success beyond affording opportunity? It gives not ability. This fact is patent!

The merit is, not to be dropped on Fortune's hill, but to mount it! Age, sex, and condition are, in themselves, considered apart, no reasons why Joan of Arc should not have accomplished what she regarded as her mission. Taken together, they acquire no additional force! The success of her enterprise, the sagacity of her counsels, the energy of her actions, the boldness of her designs, the influence of her example, are not without corresponding results in recent times. We look to the progress of Clive, the career of Washington, the success of Napoleon, the glory of Wellington, and find that now, as then, great and glorious results assuredly follow when the will to do and the soul to dare are stimulated by a sense of national necessity, supported by manly hearts, whose brightest visions are the glories of their country, and proudest trophies honourable scars received in her service.

That a writer of Mr. Madden's known ability, who, throughout the volume before us, displays such evidences of superior powers of mind, should advocate the inspiration of Joan of Arc, we regard as not the least curious revelation which his pages offer. We would gladly prolong the discussion, and reiterate arguments derivable from the character of the advice Joan offered, the instances of her success and failure, the spirit displayed in her trial and condemnation, the superstition manifested in her examination and execution, and the subsequent progress of the country it is asserted she was inspired to save, did we believe that any profitable results would follow. We trust that few of enlightened and refined minds will be found to echo the opinion, that agencies of a supernatural nature are permitted to influence the conduct of our affairs, especially when their condition is explicable by incompetency or negligence. There is, we regret much to observe, even in this our day, abundant evidence that men of strong minds are not free from such sentiments. The murderer, reeking with his victim's blood, rests secure while clairvoyance trifles with justice; sage men bow with reverence to the charlatanic suggestions of mesmerism; science revolts from the prostitution of her resources to promote the success of unblushing quackery; while men of reason confer together, and wonder that, in this the nineteenth century, witchcraft again revives to rob the simple of their slender means, or supply the criminal with instruments of wrong.

For a complete account of the epidemic monomania and demonopathy, in the fifteenth, sixteenth, and seventeenth centuries, which visited several convents, we refer with confidence to the pages now under review. Those curious in such mat-

ters will there find ample details. Medical men who have studied the sympathies of the female constitution, and examine these details with a psychological scrutiny, will without much difficulty offer explanations for their cause as well as progress.

The following sentiments will, we are satisfied, while enlisting our sympathy, find a response from those familiar with the homesteads of our poor. Speaking of sisters of charity and their labours, Mr. Madden writes,—

"Other results may be expected from the stirring instincts of their heroic charity, of a piety that manifests itself in compassion for poverty and suffering, from the performance of the highest duty to humanity, with the purest intentions and the holiest feelings of devotion to God's service, in all humility and simplicity of heart and mind; from works of mercy and continual self-sacrifice, wherever their services are called for,—no matter how loathsome may be the horrors, imminent the dangers, and painful or repulsive the lineaments of sin or sorrow they have to encounter at the bed-side of the sick, and the dying, and of the suffering of all categories, in the extremities of human misery in its direst circumstances of destitution, squalor, and all surrounding sources of contamination."

We are further informed, that,—

"Forty of the sisters who devoted themselves to the service of the sick and the wounded of the allied armies in the East, in the late war, perished in the discharge of their duties, either in the hospitals of Varna and Scutari, or in the Crimea, or from the effects of the discharge of those duties, within a few months after their return to Europe; the victims of their incessant labours in that campaign."

Peace be with them, and hallowed be their memories, say we; may the soil lie gently on their graves!

Rapport à la Société de Chirurgie sur l'Eléphantiasis du Scrotum. Par M. Hte. Bon. Larrey. Paris: Victor Masson. 1856. 4to, pp. 172.

It appears that in the year 1855 M. Larrey presented to the Society of Surgery in Paris a Memoir from the pen of their "celebrated confrère," Dr. Clot Bey, "On the Elephantiasis of the Arabs, particularly that which is developed in the Scrotum; with general considerations on Lepra and Elephantiasis."

On the receipt of this communication the Society appointed a Commission, consisting of MM. Monod, Guersant, and Larrey,

to inquire into and report upon the work. The volume now before us is the result of the labours of the Commission, the task of drawing up and editing the Report having devolved upon M. Larrey.

The reporter premises that, in the year 1830, M. Clot Bey had published his first observations on Elephantiasis Arabum, accompanied by practical remarks and illustrated with engravings of the disease; also that, in about four years afterwards, he added some new reflections. The Commission have considered it necessary that this statement should be made as preliminary to the analysis of the actual memoir, in order to insure to Dr. Clot Bey the merit of a priority relatively to other publications than his own on the same subject. He had subsequently confirmed, by personal observations in Egypt, those which Baron Larrey had collected there for the first time during the memorable expedition of General Buonaparte. To these and such like *souvenirs* the reporter attaches a particular interest.

It were difficult to give our readers anything like an epitome of the facts and observations abounding in this valuable monograph; for we have throughout the Report a complete digest of the observations and opinions of all the medical writers who have studied the disease in question in those countries in which it is endemic. The Report commences, after a few preliminary remarks, with a historical account of elephantiasis scroti and its endemicity; after which we find, successively described, the causes, symptoms, complications, diagnosis and prognosis, terminations, pathological anatomy, and treatment of this singular malady. In turning over the leaves of this voluminous Report we meet with evidences of the most laborious research on the part of M. Larrey, who has evidently bestowed a good deal of care upon the arrangement of the matter; but while he has skilfully disposed the results of the numerous researches he must have made in order to study his subject fully, as well in its *ensemble* as in its details, he has taken care to give a due degree of prominence in every case to the opinions entertained by the author of the memoir.

Dr. Clot Bey, like Larrey and some others, does not admit elephantiasis to be a simple manifestation or a mere variety of lepra. He attributes the latter to a general condition of the system, a sort of idiosyncrasy, while he ascribes the former to a peculiar morbid state which exists locally, is sufficiently common in certain countries, but arises from external causes. With regard to the seat of the disease, according to his observations, true tubercular lepra attacks generally the face and the

upper extremities, while elephantiasis is observed almost exclusively in the inferior extremities and the scrotum; sometimes, however, it affects the labia, and more rarely the mammary glands. The two diseases differ also in their general aspect, lepra being characterized by small tubercles developed in the substance of the skin, prominent externally, degenerating into scaly ulcers, which gradually extend in breadth and depth, denuding the bones and affecting them with caries and necrosis, also giving rise to sphacelation of the fingers and toes. The principal phenomena of elephantiasis are described as tumefaction, hypertrophy, œdema, and sometimes inflammation of the affected part, without the production of isolated tubercles, although the integuments in some cases are covered with scaly crusts and superficial ulcerations. The latter affection does not present those morbid conditions of the general system which usually attend lepra, such as stupor, alteration of voice, fetor of breath, general feverishness, with disturbed digestion and progressive emaciation.

The author has not been able in a single instance to examine a body in case of death by elephantiasis; he has, however, seen one case of a person who had sunk from the effects of some other affection while labouring under the disease in question. This case is described as having presented a hypertrophied condition of the subcutaneous areolar tissue (which, according to the author, is the essential seat of the disease), accompanied by infiltration of serum.

In the morbid state described above, the lymphatic system did not appear to have taken the least part, and similar observations are reported regarding several tumours of considerable volume which had been extirpated, in all of which a careful examination of the lymphatics failed to detect an extension of the disease. This fact, in the opinion of the author, establishes a formal contradiction to the opinion advanced by Alard in his book ("Histoire d'une Maladie particulière du système lymphatique:" 1806), in which he considers elephantiasis as an inherent affection of the lymphatic system. "And yet," adds M. Clot Bey, "this opinion has been reiterated by most physicians who have written on this subject."

Regarding the appearances in the leprous form of disease, this observer had occasion to make several post-mortem examinations, and he found a "complete degeneration of the skin and areolar tissue, with ramollissement of the tubercles and divers lesions of the lymphatic system, as well as of the organs of the digestive apparatus." He never met with lepra and elephantiasis simultaneously in the same individual; and this

existence of one disease, to the exclusion of the other is, in his opinion, a further argument in favour of their non-identity.

The reporter speaks in favourable terms of the general issue of operations practised for the removal of elephantiasis. He says:—"Notwithstanding the vast incisions for the ablation of the tissues, these operations usually succeed, and cicatrization proceeds with tolerable rapidity; whilst this is by no means the case in regard to the leprous, amongst whom a special diathesis, like that of cancer, tends to a reproduction of the mischief, to such a degree that a single wound or excoriation soon assumes the character of a gnawing ulcer."

To the Report itself we must now refer those of our readers who are interested in the study of this unsightly affection, believing, as we do, that in this work they will find a full and faithful representation of the experience of one whose long sojourn in Egypt has given him abundant opportunities of practically studying the malady in question under its diverse forms, and in all its degrees.

Du Microscope au point de Vue de ses applications à la Connaissance et au Traitement des Maladies Chirurgicales. Par le DR. L. SAUREL. Paris: Baillière. 1857. 8vo, pp. 148.

THE extreme attention which has latterly been bestowed on microscopic investigations has been confessedly sufficient to create a new era, at least, in several departments of the medical profession. A certain acquaintance with its powers of revelation has now become more or less necessary to the professors of our art, and in many instances both the physician and surgeon have had ample reason to feel grateful for the assistance afforded by its employment in those cases where a proper diagnosis would otherwise have been beset with serious difficulty, or, to speak more properly, would have been under ordinary circumstances almost an impossibility. Still, however, whilst thankfully acknowledging the indisputable aid which we have so often derived from its use, it would be an absurdity to maintain that we can in all instances implicitly rely on the indications drawn from it,—a fact which Dr. Saurel has taken much pains to impress upon us most emphatically; while, to attach still greater weight to his own sentiments, he has yet further corroborated the views thus laid down by an extract from the writings of the celebrated Donné, whose ideas on this subject, from his long experience, must always be such as to be received with a proper amount of consideration and respect. Accord-

ingly, after having enumerated the several and varied duties which the microcsope has been called on to perform, with the object of elucidating obscurities, oftentimes the most opposite in their character, he thus proceeds to observe:—

"This exaggeration cannot be of long duration, and the most convinced and skilful advocates of the microscope are amongst the first to acknowledge that it constitutes a mode of study calculated only to aid those of which we are already in possession. It is in this sense that a philosopher who has been one of the first to introduce a taste for this instrument into France expresses himself—

"'Without desiring, he remarks, to restrict to an extent too great the field of microscopic observation, it is right never to forget that the microscope is a species of reagent fitted to define substances which by their nature or quantity elude the process of chemical analysis. This idea, taken in conjunction with the employment of this instrument, is useful in confining observers to a proper path.'"

To the absolute justice of those views, British microscopists have long since most fully subscribed, and by them the instrument has been almost invariably employed either simply to confirm preconceived opinions, or, in cases of more than ordinary obscurity, to afford some casual hint, by which, in connexion with other existing indications, a clue may be obtained capable of resolving a doubt or revealing a mode on which may be based a plan of treatment rationally adapted to effect the object they may be desirous of accomplishing. Still, however, it must be allowed that there are very many who, on first devoting themselves to this particular study, have indulged in no measured day-dreams respecting the wonderful discoveries that were yet to be achieved as the consequence of their miraculous exertions, but who, after no very lengthened period, have been constrained to acknowledge that the sanguine expectations they once entertained had cooled down in a remarkable degree, on discovering that the results which they obtained as the reward of hours devoted to patient and persevering inquiry were not always of a character so distinctive and decided as would justify them, without much modification, in establishing a tenable theory, which might, under all circumstances, and without the apprehension of contradiction, appeal for its support to the reasoning faculties of the many cavillers with which, unfortunately for their class, the world at large is at present so thickly studded. It would be ridiculous to assert that there are not certain limits beyond which the prying investigation of the microscope cannot possi-

bly extend; and we are decidedly of opinion that Dr. Saurel has conferred no small boon on the profession in thus endeavouring to remove many of the delusions with which it has been, we regret to say, very generally invested, and in accomplishing this object he has displayed a vast amount of clever and ingenious argument, combined with still larger scope of extensive and varied reading. In conclusion, we feel no hesitation in stating that the little work before us must exercise an unquestionable influence in encouraging and promoting a more assiduous and better directed application in the laudable effort of striving to develop on a broader and really trustworthy scale the powers of an instrument as yet only in its infancy, and comparatively but little understood, and for these very reasons its deductions being always so liable to be impugned, doubted, or flatly contradicted.

A Treatise on Cancer and its Treatment. By J. WELDON FELL, M.D., &c. London: Churchill. 1857. 8vo, pp. 95.

IT would not accord with our ideas of professional justice did we allow the various notices of Dr. Fell's essay, which have appeared in the medical journals of England, to influence our judgment in arriving at a just decision in relation to the much-vexed question of medical ethics involved by the reservation of *secret remedies* or *cancer specifics*. Notwithstanding the all-engrossing nature of the subject, which has already done good service to the state of journalism, in the form of reviews, lectures, and correspondence, we must express our conviction that these contributions are certainly more voluminous and exhaustive than instructive to the profession or useful to the public. It is, therefore, with regret that our duty compels us to add an additional notice to this already over-discussed subject, and, although we may arrive at the same conclusion as our literary collaborateurs, let us, however, assure Dr. Fell that we approach the examination of his special essay without a shadow of prejudice, or any other feeling save that of consideration and even indulgence towards one who claims, as a stranger to our country, if not leniency, at least the measure of even-handed justice.

The author of the essay before us, a graduate of the University of New York, being in possession of a remedy which he believes capable of curing cancer, determined to commence the special treatment of this malady in London, preserving as a secret the composition of the particular medicaments em-

ployed; still he allowed, nay invited, any members of the profession to visit his consulting rooms, and observe the progress of his treatment, a permission which it seems that many availed themselves of. At this juncture the Board of Governors of the Middlesex Hospital made overtures to Dr. Fell, in order that his remedy might receive a fair trial at that institution,—the medical staff having acquiesced in an arrangement to place twenty-five patients under his care, on the following conditions:—

"The undersigned, being the Surgical Staff of the Middlesex Hospital, have much pleasure in complying with Dr. Fell's request that they should furnish him with a report upon his treatment of certain cases of cancer under their charge in the Middlesex Hospital.

"They have learned with great satisfaction that Dr. Fell's object in obtaining this report is, that he may embody it in a work now on the eve of publication, in which he intends to disclose the peculiarities of his method of treatment to the profession.

"Before proceeding further, the undersigned consider it due to themselves, to their professional brethren, and to Dr. Fell, to state the general terms upon which, in compliance with the desire of the benevolent founder of the Cancer Establishment of the Middlesex Hospital, the Medical Committee feel it their duty to recommend to the executive authorities, that that gentleman should be allowed to pursue his plan of treatment under their superintendence in the wards.

"The terms were proposed by Dr. Fell, and were to the effect:—

"1st. That Dr. Fell should, *in confidence*, communicate to the Surgical Staff the nature of the remedies employed by him, the method of their preparation, and the mode of using them.

"2nd. That twenty-five cases should be subjected by him to treatment during a period of eight months.

"3rd. That Dr. Fell should pledge himself to publish the full particulars of his system of treatment within a period of six months; and that in case of his failing to do so, that duty should be undertaken by themselves."

Such is the brief history of this essay, which constitutes the first charge in the indictment against the professional conduct of Dr. Fell, and it seems simply to resolve itself into a question of medical ethics, involving not only Dr. Fell, but also the medical staff of the Middlesex Hospital, who have unfortunately associated themselves with the propounder of a secret remedy and the practice of mysterious surgery; still, these gentlemen, far from conceiving that they have violated any moral or professional law, deem that they deserve well of the

public for the liberal act through which the remedial agent employed by Dr. Fell remains no longer in the hands of a single individual, but becomes the property of all. Dr. Fell also had his motives for reservation. He says:—

"1st. Any book or paper written by a stranger, whatever information it might contain, is almost sure to be passed over with neglect.

"2nd. Unless the mode of preparing and applying the remedies is well understood, they might be applied in cases where they would have no beneficial effect, and thereby bring them into disrepute.

"3rd. It often happens that when a remedy or mode of treatment of importance has been introduced by one unknown to the profession, it has been adopted by some leading man, and in many cases the originator is entirely lost sight of.

"After carefully considering all the circumstances, I determined to defer making the remedies and their method of application public, until such time as I should be recognised as the originator of them; and I am glad to say that I think this time has already come, and that I can now publish my plan; for the approbation of many medical gentlemen, and the gratitude of a multitude of cured patients, have now placed it on such a broad basis of facts (and I hold that facts are everything in medicine), that it cannot well be either plagiarized, or the credit due to me disputed."

We need not express our full condemnation of any reservation, even for an hour, of a secret that might, if generally known, not only allay suffering, but possibly avert a greater calamity; for it is one of the fundamental attributes of science that its revelations should extend beyond individual interest, and conduce to the widest benefit of universal man. We must at once ignore the force of Dr. Fell's reasons for retaining the possession of a *supposed successful* remedy, even for a short period, and whilst we merely draw particular attention to the sophistry of those excuses on which he relies in extenuation of his conduct, we must certainly admire the clever appreciation which he has exhibited of the commercial tendencies of the profession in England, as well as the versatility he has displayed in adapting his practice to the peculiar idiosyncrasy of the credulous Briton, whose faith has created Holloway, Morrison, and a host of other household gods, with whom he "loves to bedeck his hearth."

In his essay Dr. Fell states that he cures, *absolutely cures*, cancer by a paste, which causes the enucleation of the tumour, combined with the exhibition of a vegetable internally; and, having given a brief account of the several remedies that are

now or have been used in this malady, he proceeds to the description of his precise mode of treatment, and here is his formula:—

"℞ Sanguinariæ Canadensis, ℥ss. vel ℥i.
Chlor. Zinci, ℥ss. vel ℥ij.
Aquæ, ℥ij.
Pulv. Sem. Tritic. Hibern., q. s.
"Mix, and form a paste the consistence of treacle."

If the cancer is "non-ulcerated," the skin is first destroyed by nitric acid; incisions about half an inch apart are then made through the slough, and the paste, spread upon strips of cotton, is inserted into the wounds daily until the tumour entirely disappears. Sometimes he substitutes a strong decoction of the "puccoon," or sanguinaria, instead of the vegetable matter, and thus produces the paste. In small incipient tumours he applies the following ointment:—

"℞ Sulph. Zinci, ℥vi.
Sanguinariæ, ℥ij.
Myricæ Ceriferæ, ℥j.
Extr. Opii (aquos.)
Ext. Conii *a a* ℥vi.
Ungt. Cetacei, ℥vi.
"Mist. et fiat ungt."

Alternating it every twelve hours with the following:—

"℞ Iod. Plumbi, ℈j.
Glycerine, ℥j.
Ungt. Cetacei, ℥ij.
"Fiat ungt."

These constitute the external means, whilst internally the powder of sanguinaria is exhibited in half-grain doses three times daily, in combination with the sixteenth of a grain of iodide of arsenic and one grain of extract of hemlock. To these are added, as adjuvants, good air, generous diet, and all other means calculated to improve the general health or restore tone to the system. It seems that Dr. Fell discovered the *supposed* virtues of the "puccoon," from traders with the inhabitants of the "far West," who informed him of its efficacy in the removal of tumours when used by the unsophisticated Indians, and his experience led him to combine it with the chloride of zinc to expedite its operation as an escharotic.

That the "sanguinaria" is a medicine of considerable therapeutic agency is undoubtedly the fact; but that it removes cancer and eradicates the special diathesis which causes the

deposit, no prudent surgeon, according to the *present* evidence, will either affirm or deny. *Time alone* can determine the value of the remedy, and, although our past experience of cancer-curing systems would lead us to ignore Dr. Fell's therapeutic agent as useless, except as a mere adjuvant to the chloride of zinc, still, candour and honesty compel us to leave to the result of time the promulgation of that sentence which shall mark him as a human benefactor, or stigmatize his deception as one of the grossest exhibitions of charlatanry that disgrace the age.

God in Disease; or the Manifestations of Design in Morbid Phenomena. By JAMES FOULIS DUNCAN, M.D., Fellow of the Royal College of Physicians in Ireland, Physician to Sir P. Dun's and Simpson's Hospitals. Second Edition. London: Nisbet and Co., 1857. Post 8vo, pp. 323.

IN the eleventh volume of our present series we noticed the first edition of Dr. Duncan's book, commending both the plan and the execution, our only objection being to the title which the author selected. The verdict of both the public and the profession—for a work of its nature legitimately claims the suffrages of both—now confirms our favourable judgment, and the work is republished after having been permitted to be a considerable time out of print, "the greater part having been rewritten, and the remainder carefully revised." We cannot conceive a more difficult subject for a medical writer to touch upon than the attempt to prove a direct evidence of design in the infliction of disease upon man; and therefore we consider the more credit is due to Dr. Duncan for having so completely succeeded in his task. He has well avoided the quicksands of cant and hypocrisy on the one hand, while steering clear of the covered rocks of man's self-justification on the other.

It would be foreign to the purely practical nature—we mean in a professional point of view—of our pages to enter into any particular account of this volume; we shall therefore merely indicate to our readers the substance of its contents. The author first discusses the prevailing opinions as to the cause of disease, and examines the arguments capable of being adduced in support of the different views commonly held. He then reviews the "*nature of design*" intended to be accomplished by disease as it affects society at large and with reference to individuals, and its evidences, the latter being deduced from the proofs afforded by the varieties of disease, from

pain and its modifications, and from other symptoms, such as nausea, vomiting, diarrhœa, sudden hemorrhage, fainting, &c. The processes of preservation, of reparation, and of adaptation are next applied to illustrate the subject, followed up by some observations on the analogies which may be deduced by a comparison between certain disorders and the mode of revelation of spiritual truths. And lastly, before summing up his subject, the conduct of the physician towards his patients is brought in "as illustrating the dealings of God with his creatures."

We have already, on a former occasion, given to Dr. Duncan the credit which he so justly deserves for his attempt to rescue the character of the medical practitioner from the illiberal slur thrown upon our noble profession by those ignorant of its tendencies to develop the best feelings planted by nature in the heart of man. This he does most effectually by the evidence he personally affords in publishing the volume before us, which supplies to the sufferer from disease a connecting link between the duties of the divine and the physician.

Animal Physics; or, the Body and its Functions familiarly explained. By Dionysius Lardner, D. C. L. With 520 Illustrations. London: Walton and Maberly, 1857. Small 8vo, pp. 705.

In the present age of advancement, within our own time so specially marked by the establishment of the system of competitive examination, whereby intellect can be no longer sacrificed at the shrine of interest, scarcely a greater boon could be conferred on the rising generation than the publication of this book. In it, to use the words of the title-page, are "familiarly explained" the animal organization generally, the bones and ligaments, the muscles, the structure of the lower animals, the nervous system, circulation, respiration, digestion, and the senses; the concluding chapter containing an account of "development, maturity, decline, and death." As affording an example of the clearness and simplicity of the author's style, we extract the very last pages of the book:—

"The first period of life in all animals presents the vital functions in a state of extraordinary activity. The increase of magnitude which the body receives is so much the more rapid as the animal is younger, and each year that passes adds proportionally less to the stature than that which preceded it. A child of three years old has already attained about half the total height of the adult.

"The development of the body in bulk is slower than its growth in height. A new-born infant has upon an average about a twentieth of the weight which it will acquire upon attaining its greatest development, which takes place in general for men at forty and for women at fifty.

"During the first year after birth, the increment of weight is about one-tenth of all that it will receive during its subsequent existence; and the increase of weight received from the fifteenth to the twentieth year is even greater than that which is acquired in the first five years.

"On arriving nearly at the limit of his stature, the male passing from youth to manhood undergoes several organic changes. His bones, having acquired a larger proportion of the earthy constituent, have increased strength, his muscles are more developed and powerful. His voice, losing the feminine pitch which characterizes boyhood, becomes almost suddenly much more grave, and his beard is rapidly developed.

"The corresponding changes in the female organism are manifested somewhat earlier, and show themselves by external forms familiar to every eye. The chest becomes enlarged, the shoulders expanded, the pelvis acquires greater width, and the forms of womanhood become conspicuously visible. In temperate climates these changes are manifested at from fourteen to sixteen years of age. In warm climates they take place at from ten to eleven, and in colder countries are postponed to seventeen or eighteen.

"The circulation at the commencement of life has an activity corresponding to that of the other vital functions. The number of arterial pulsations per minute during the first and second month of the infant is 140. In the sixth month it is reduced to 128, in the twelfth to 120; at the close of the second year to 110, and in the adult it descends to from 75 to 80. The same series of changes are manifested in respiration. While the number of respirations of the adult vary from 15 to 18 per minute, those of new-born children range from 30 to 40.

"The infantile respiration develops more heat than that of the adult; and this is rendered obviously necessary, since, independently of other considerations, the surface of the infantile body is greater in proportion to its volume than that of the adult, and consequently subject to a greater degree of cooling by radiation.

"The maternal milk is the proper and exclusive nutriment of the infant for the first six or eight months, about which time a semi-liquid pap, made of wheaten flour or from the crumb of stale bread pulverized, is united with it. Soon after this the food may be varied by a combination with semoline, fecula, the cream of rice, &c. Towards the end of the first year, the food may include broths made from chicken, veal, or beef, at first diluted, and later pure. In fine, at the age of from fifteen to eighteen months, the teeth having issued from the gums, mastication commences, and the infant

being weaned, the transition to solid food is made, but requires to be conducted with great precaution.

"The development of the teeth at the different stages of life, from infancy to adolescence, has been already explained.

"During these changes in the organs of taste and mastication, other modifications take place in the alimentary canal. The stomach takes a more horizontal position, and, as well as the large intestine, acquires increased capacity. The liver and the kidneys increase less rapidly than the other parts of the body, and the urinary bladder descends into the pelvis.

"In coming into the world, the infant can open the eyes, but physiologists consider that it has no sense of vision, and that it is only at the end of some weeks that it begins to be sensible of visible objects. After this, it directs its looks to objects which are most brilliantly illuminated, or which are characterized by the most vivid colours. It then, by slow degrees, begins to distinguish objects around it, but it has been ascertained that a considerable time elapses before it has any idea of distances or magnitude.

"Indeed, this is quite consistent with effects which have been found to result from surgical operations in which sight has been restored to persons blind from infancy. In such cases, it has been stated that the subject of the operation, when first enabled to see, imagined that all the objects which he beheld were in immediate contact with his eyes, and had not the least idea of their relative distances, nor any other notions of their magnitudes or forms than such as were afforded by their profiles. Every object, in short, appeared as a coloured silhouette in close contiguity with the organs of vision.

"The other organs equally undergo a progressive improvement by exercise. During five or six months the infant makes no other vocal sound than inarticulate cries. It begins gradually to be sensible of pleasurable emotions from the contemplation of external objects, which are expressed by its smiles. The cries gradually assume the tone and character of the voice, and are accompanied by incipient efforts at articulation, and towards the close of the first year the more simple monosyllabic words are pronounced.

"The bones, which at the time of birth consist to a great extent of cartilage or gristle, and have no strength sufficient to support the body, receive, in the process of nutrition, a gradual accession of the earthy constituent called the phosphate of lime, which gives them hardness. Contemporaneously with this increase of strength in the bones, there is a proportionate growth and increase of strength in the muscles which move them, and about the close of the first year this strength bears such a relation to the weight of the body, that the child is enabled to support itself on its legs, and by gradual practice acquires the ability to walk.

"Towards the age of five-and-twenty manhood is attained. Growth has usually ceased for some years. The parts of the skeleton

which had been cartilaginous are ossified, and the perfection of solidity and strength in that structure is acquired. The functions of nutrition and assimilation have arrived at a state of equilibrium. The intellectual faculties begin to lose the passionate vivacity of adolescence: the brilliant illusions of youth giving place to the sober maturity of masculine judgment.

"The ardour and often the delicacy and refinement of love is abated from year to year, and a tendency to less elevated sentiments is manifested, which, however, is controlled and more or less suppressed by moral restraint, and still more by the indirect influence of the love of children, which strengthens the conjugal affection.

"Towards sixty, the energies in most cases are gradually decreased. Active life has reached its term. Decline is manifested, and the signs of old age begin to appear.

"At length that epoch comes. The tissues soften. The visage becomes lined and wrinkled. The hairs are sparse and white. The teeth loosen, and, one by one, fall. Digestion is enfeebled, circulation slackened. Ossification invades the vascular system so as to impede assimilation.

"The organs of sense become obtuse, the sight confused, the hearing dull. The movements are slow and difficult. The muscles are less obedient to the nerves; the nerves less obedient to the will. The bones become harder and more brittle. The voice, losing its clearness and purity, is cracked. Year after year decadence progresses, and at length the cessation of the functions of respiration and circulation closes an existence which has ceased to share in the maintenance of the organized world."

We can strongly recommend this volume, perfect in accuracy and arrangement, as affording an excellent, yet strictly popular, view of animal physics,—a subject which we doubt not must now become a part of general education. It is profusely illustrated with well-executed woodcuts, and, from its completeness throughout, we expect to see it adopted as a textbook in all schools of preliminary instruction for those who are to be educated for any of the learned professions.

The Transactions of the American Medical Association, instituted 1847. Vol. IX. Philadelphia: J. K. and O. G. Collins, 1856. 8vo, pp. 907.

We had intended reviewing at some length this volume in our present Number, but the pressure on our space, arising from the great extent of the Original Communications, prevents us from doing more than noticing very briefly some of its contents. Like the preceding volumes of these important Transactions, it contains an account of the annual meeting which was held

in the city of Detroit, Michigan, on the 11th May, 1856, the President's Address, a Prize Essay on the Arterial Circulation, and nineteen Reports from the Committees of the Association, ten of which are on some important disease, or subject immediately connected with the practice of medicine or surgery. Of these we would especially notice as worthy of commendation the second and concluding part of one on "Deformities after Fractures," by F. H. Hamilton, which occupies 164 pages, and is profusely illustrated, and another on "Hydrophobia," which extends to 104 pages, and constitutes the most complete history of this fell disease with which we are acquainted. There are two Reports, however, in the volume which we regard as demanding the severest reprehension from medical writers on this side of the Atlantic, and the condemnation of every honest man of every country,—one is from the pen of Dr. Gross, "On the Causes which impede the progress of American Medical Literature," and the other from the Committee on "Medical Literature," signed by R. J. Breckinridge, J. B. Flint, and D. L. M'Gugin; in both of them the wholesale piratical robberies of British medical works are defended on the selfish principle which, we grieve to say, characterizes too many of the sayings and doings of the inhabitants of the United States,—*Dishonesty is the best policy, provided only it advances our own interests.* But personally we have suffered so much from the dishonest acts of American publishers, that we cannot trust ourselves to dwell longer on the grievance.

Öfversigt af Otiatrikens historia och närvarande tillstånd; Tal hållet vid Svenska Läkare-sällskapets allmänna årssammankomst d. 7 Okt. 1856 *af afgående ordföranden* Dr. J. F. G. Keyser. Stockholm, 1857. P. A. Norstedt och Söner.

A Sketch of the History and present State of Otology: an Address delivered at the Annual General Meeting of the Swedish Society of Physicians, on the 7th October, 1856, *by the outgoing President*, Dr. J. F. G. Keyser. 8vo, pp. 55.

The lateness of the period at which we received Dr. Keyser's pamphlet prevented us from reviewing it more at length in our article on "Recent Swedish Medical Literature." It is an interesting resumé of the history of aural literature from the earliest times to the present day, in which we are happy to observe that the author names Mr. Wilde, "as occupying the foremost place" among writers on otology.

PART III.

MEDICAL MISCELLANY.

TRANSACTIONS OF THE ASSOCIATION OF THE FELLOWS AND LICENTIATES OF THE KING AND QUEEN'S COLLEGE OF PHYSICIANS IN IRELAND.

(*Continued from* vol. xxiii. p. 217.)

SESSION 1856–7.

Third Meeting, January 7th, 1857.

Dr. Henry Kennedy read a paper upon the *Character of the Spots observed in Fevers;* having special reference to the diagnosis of typhus as distinguished from typhoid fever, in which he endeavoured to prove that fevers could not be classified according to the varieties of spots.

Fourth Meeting, March 4th, 1857.

Dr. Henry Kennedy read a paper upon the following question: "*Is Intestinal Hemorrhage Diagnostic of Typhus or Typhoid Fever?*" He thus proceeded—

"On the last night of meeting a very animated discussion followed the paper 'On the Character of the Spots observed in Fevers; having special reference to the diagnosis of typhus as distinguished from typhoid fever.' Some of the Members thought that the subject was not exhausted, and might be brought forward again. With this impression I venture to do so. But I will introduce the subject under a different aspect.

"Some time since an essay 'on Hemorrhage in Fevers' was published in the Dublin Journal. Amongst the several forms, one in particular was spoken of at some length, viz., hemorrhage from the bowels. Its great importance entitled it to a lengthened notice. Several points directly connected with this special hemorrhage were mentioned: such as its site, quantity, the stage of the disease at which it appeared, relative mortality, and so on. These I shall not again allude to, but will confine myself, as much as possible, to a

single point which appears to me to call for more consideration than I believe it has yet received.

"Probably I cannot better introduce the subject than by alluding very briefly to the experience I have had since the essay alluded to was published. Three additional cases have come under my own notice, all of which recovered. This makes the entire cases I have seen forty-two; amongst which there were eleven deaths; or as nearly as possible, 1 in 4. Considering the nature of these cases, this mortality will, I think, be looked on as low—a matter of some moment; for I rather think the idea amongst the profession is, that they are a much more serious class of hemorrhages than this mortality would lead us to suspect. It is worth noting, as regards sex, that the forty-two cases are exactly divided. Of the three I have just spoken of, two presented nothing unusual: the third I shall detail.

"Case I.—A girl, aged eleven years, was attacked with the symptoms of fever, such as are seen at that period of life. There was some irritability of the stomach at first, and the tongue was reddish and covered with a thick white coat. She was in a very small room, considering the number who lived in it; nor could I induce the parents to send her to hospital. A very marked crisis by sweat occurred about the ninth day, and the child was shortly after able to get up. She then relapsed, the fever being much more intense than at first. This attack was prolonged, with very little change, till the fifteenth day, the skin having kept burning hot all the time. At this period, and after several hours of great restlessness, she was seized with bleeding from the bowels, the shock being so great that the people round thought she would have died. She passed about ten ounces of black semi-coagulated blood, with no trace of fæces in it. This I saw. From this state, by ordinary means, she rallied, and so continued for fourteen hours; when there was a second rush of blood, but not so large as at first. After this she got steadily though slowly well: a severe cough having come on during her convalescence.

"I have detailed this case, though not one of any particular interest, because it enables me to make a few remarks in direct connexion with the special point I would bring under notice this evening.

"The case, it may be observed, was a good example of what probably is the most frequent form under which hemorrhage from the bowels occurs in fevers; that is, after a prolonged attack a sudden gush takes place, which is renewed; and yet, speaking generally of such cases, they ultimately do well. In my own experience the greater number of the cases, by much, have presented marks of what is known as the strumous diathesis; this patient was a good example of it; and the point, I believe, is one of considerable importance to keep in mind, especially when we come to consider the treatment. The number of times in which there may be a rush of blood is, in some of these cases, truly remarkable; and even a week

or more may be so occupied, rendering such cases most critical, and puzzling the physician to understand how the system can hold out under such repeated losses. And yet, I must say again, that the great majority of them do well ultimately. That the blood itself is profoundly altered there can, I presume, be little doubt; but what the alteration consists in has yet to be determined.

"It is to other points, however, than these I would wish to direct the attention of the meeting this evening: nor can the subject be better introduced than in the form of a query:—Is the fever known as typhoid, that is, attended with ulceration of the ileum, usually characterized by hemorrhage from the bowels? I believe this to be a point of some consequence to ascertain; for the general impression seems to be that hemorrhage and ulceration go hand in hand; and I know that some able writers have stated the like opinion. If, however, this should prove to be incorrect—as I rather think will turn out to be the case—it follows that we may get a new diagnostic mark between the two types of fever; and where difficulties exist, as all admit do, the clearing up this point may be of some consequence.

"I would begin, then, by observing that all the analogies we know of are opposed to the idea that ulceration of a mucous membrane is attendant on hemorrhage from the same part. Thus in fevers we have bleedings from the nose, bronchial mucous membrane, stomach, and uterus; yet in none of these do we ever think of looking to ulceration as a cause or attendant on the hemorrhages. On the contrary, we know that it is by exudation the blood is yielded, and that no abrasion at all exists. And so it is in intestinal hemorrhage; the blood is poured out, and, as I have now had several examples of ascertaining—through looking closely for it—without any abrasion, to say nothing of ulceration, whatever. Indeed, the source of the bleeding, as I have stated before, is still an undetermined point; though I believe it is most usually from the small intestine the blood comes. It is true I have found traces of blood in the large intestine, where there had, during life, been hemorrhage; but the pale state of the membrane here, compared with the intense congestion higher up and in the small intestine, satisfied me that the blood had been exuded above, and then passed downwards. As more certain proof, however, on this point, I venture to detail again a case, which, though given already, is so remarkable, I may say unique, in every point of view, as to entitle it to the fullest consideration, besides that it bears directly on the point under consideration.

"Case II.—A girl of thirteen years of age, well-grown, passed through a mild fever; and was so far better as to have asked for food; but at this period the fever had not ceased. On the evening of the twelfth day of her illness she was suddenly seized with collapse, marked by cold and livid extremities and weak pulse. She also vomited, and complained of pain in the abdomen, which, however, pressure did not seem to increase. She lay on her back, with

her legs drawn up, and was quite collected. She continued to retch, at intervals, through the night, and also complained of pain, but not of a severe character. Her face, however, gradually assumed a pinched and livid look, the extremities became colder and colder, the pulse failed at the wrist, and she died just fourteen hours after the first signs of collapse had set in, being the thirteenth day of her illness. On examination, for which I was indebted to the kindness of my friend, Surgeon Shannon, the cause of death became at once apparent. A large effusion of loosely coagulated blood, of a very black colour, occupied the lower part of the jejunum, and upper portion of the ileum. Twenty inches of intestine were so occupied, and the mucous surface was of the very deepest dye; but the closest examination could not detect any abrasion. There was no blood either above or below the part indicated; near the sigmoid flexure lay a small portion of fæces of a healthy colour. The contrast between the parts where blood lay, and where there was none, was truly remarkable.

"Such is the sketch of a case of no common interest, which would admit of discussion in several points of view, but which I have given here as showing, first, where hemorrhage from the bowels, in the progress of fever, may come from; and secondly, that blood may be poured out in large quantity without any abrasion.

"But what is the result of general experience as bearing on this point? In Louis' able work on Typhoid Fever nearly sixty cases are accurately detailed; and of all these there are but two in which hemorrhage from the bowels occurred; and not only this, but he also draws attention to the extreme rarity of the occurrence; showing more directly his opinion on the matter. Andral speaks of the exhalation of blood from the mucous membrane of the small intestines; but he especially notices that it is not met in connexion with any lesion of the mucous membrane. He speaks, too, of fatal cases of this kind: a fact, by the way, which proves that typhoid is not the exclusive fever of France. Bright, again, in his valuable series of cases, amounting to twenty, incidentally mentions hemorrhage but once; nor does he give it as a symptom of the disease at all. My own observations go entirely the same way; for I have seen but twice, in a series of years, the occurrence of hemorrhage in typhoid fever. One case ran out to the twenty-ninth day, and here the bleeding occurred on the eighteenth and nineteenth days. The other case was shown very lately at the Pathological Society by Dr. M'Dowel.

"One author, Dr. Jenner, of London, it is right to state, has arrived at a different conclusion from those just quoted. Out of twenty-one cases, he gives as many as one-third where hemorrhage took place. I am quite at a loss to explain this discrepancy; for it will be observed, it is directly opposed to Dr. Bright's observations, as given before, as well as the others; and yet the experience of both gentlemen was obtained in London. It would have been desirable if the treatment of Dr. Jenner's cases had been given, as is that

of Dr. Bright's; for, of late years, some of the physicians of London, I must say, appear to me to have been wandering away from the inductions of legitimate medicine; and sure I am, that the carrying out the tonic and stimulant plan—now so much in vogue there—would be quite sufficient to account for the difference of the observations to which attention has been drawn.

"Ormerod's cases, amounting to thirty-seven, give two fatal instances of hemorrhage attended with ulceration of the ileum. But these thirty-seven cases are not so given as to separate the typhus from those of the typhoid type.

"In Flint's most elaborate work, out of sixty-one cases of typhoid fever, I find but three attended with hemorrhage from the bowels.

"Out of a record of 232 cases of typhoid fever, occurring in patients under fifteen years of age, and given by Taupin, Billing, and Barthez, but one instance of bleeding from the bowels is noticed.

"Chomel, out of forty-two cases of typhoid fever, gives six in which hemorrhage, or rather signs of it, were present; for, out of the six, but two showed it in the ordinary way, by its having been passed. In the other four, fluid tinged by blood, but not blood itself, existed under the mucous membrane of the small intestine.

"To come back, however, to the point more immediately under consideration. The recovery of the great majority of the cases of intestinal hemorrhage, which have come under my own notice, has been rapid, or at least not prolonged to an unusual length. In some instances the bleeding proved distinctly critical; and from that moment the patient made a rapid recovery. Now I think such facts are entirely opposed to the idea that the bleeding was due to or connected in any way with ulcerated intestine; for we have every reason for supposing that the healing of ulcers here is, under the most favourable circumstances, a very slow process; and could not have gone on in the comparatively short period in which convalescence and health were established.

"To some the discussion of the point brought under notice may appear of little moment. But in reality it is not so. Any fact which has even a tendency to throw light on a question which must still be considered *sub judice*—and such is the question of the identity or non-identity of typhus and typhoid fevers—is of consequence; and if it should be proved that intestinal hemorrhage is of more frequent occurrence in typhus than in typhoid fevers, a diagnostic of no little importance will have been learned. At any rate the point seems to myself well worthy of consideration, and, as such, it has been now brought forward. Probably, in conclusion, I may be allowed to throw into a series of propositions the several points brought under notice in these remarks:—

"1. That intestinal hemorrhage is common to fevers of both the typhus and typhoid type.

"2. That it would appear to be more common in typhus and common fevers, than in typhoid fever.

"That the blood may, beyond dispute, be exuded from the mucous membrane, independent of ulceration.

"That a hemorrhage sufficient to cause death may take place from the mucous membrane of the small intestine, and may be, in the strictest sense, an internal hemorrhage, the blood not leaving the part on which it was poured out.

"5. That the recovery of patients after intestinal hemorrhage is, in general, too rapid to allow us to suppose that it was the result of ulcerated intestine.

"6. That as a corollary from these several points, intestinal hemorrhage may afford us an additional diagnostic mark between typhus and typhoid fevers."

Dr. Montgomery detailed four short cases of an obstetric nature:—

"1st. A case of coma supervening on jaundice with ascites, in a pregnant woman; in whose case there was extraordinary difficulty in detecting pregnancy.

"2nd. Premature discharge of the liquor amnii.

"3rd. Thickening of the placental membranes.

"4th. Remarkable form of prolapse of the pelvic viscera."

Fifth Meeting, April 1st, 1857.

Dr. Law read a paper on *The Effects of the Shower Bath in Delirium Tremens, and other similar Conditions of the Cerebral Excitement.*

Dr. M'Clintock communicated the following case of *Suicidal Poisoning by Strychnia:*—

"Although the number of recorded examples of poisoning by strychnia is now pretty considerable, still I conceive that every fresh instance constitutes an accession to toxicology, and must have a value proportionate to the accuracy and completeness of its details. I am induced, therefore, to bring under the notice of the Association the following history of a case of suicidal poisoning by strychnia. It does not present, I believe, any new feature in the physiological action of this agent, nor does it afford any remarkable illustration of those features which are already known; nevertheless, it can scarcely fail of being heard with deep and painful interest.

"I was not myself an eye-witness of this case, but the physicians under whose immediate observation it fell were well known to me, as was also the unfortunate young gentleman who forms the subject of the history. The facts to be submitted were furnished by the two medical attendants, and I put them forward with the fullest confidence in their correctness. The characters of both these gentlemen, for probity and professional ability, are unimpeachable[a].

"This history was drawn up, at my request, from notes made

[a] The names of all the parties are suppressed, in compliance with the earnest wishes of the deceased young gentleman's friends and relatives.

at the time the case occurred—now some years ago—and was verified by each of the medical observers. Having been placed at my disposal (quite recently, with permission to make whatever use of it seemed desirable), I thought I could not do better than submit its details to the Association.

"Mr. ——, about sixteen years of age, had been for some time labouring under extreme depression of spirits, and total alteration of habits and feelings, so much so that hints were given to his friends to have him closely watched.

"About 5 o'clock A.M. of the 8th November, 1853, the family doctor was urgently sent for, in consequence of Mr. —— having precipitated himself from a top window of the house where he resided, into the area, a distance of thirty-five or forty feet. Under the pretext of wanting to go to the water-closet he had left his room; but the suspicions of his attendant being excited, he followed him in a few minutes, and discovered what had occurred. Not many minutes, therefore, after the fall he was found lying on his back on the flags of the area or yard. He was perfectly conscious, and able to speak. On being helped up, he walked into the house, and, leaning on the arm of his friend and attendant, ascended five flights of stairs to his bed-room. Some fifteen or twenty minutes subsequently Dr. —— arrived, and saw him in bed. After most careful and minute examination he could not detect any fracture or serious injury. There was a small superficial wound of the forehead, and another on the front of the right ankle. While engaged in dressing this latter wound the doctor was struck with the appearance of *spasms of the lower limbs*. The lad was perfectly sensible, and complained only of pain in the lower part of the back and in the left lumbar region, which was somewhat tender on pressure. Dr. —— now observed that the *least attempt at motion* brought on these spasms. After some time he was seized with a violent attack of convulsions, during which the face was very pallid, and assumed a tetanoid expression, but was not distorted as in epilepsy. On the subsidence of the fit he lay for a few minutes in a slightly comatose state, but without any stertor. Previously to this he had swallowed freely. The pulse was very quick and small; respiration very much hurried. As may be well conceived, Dr. —— was very much at a loss to account for the anomalous symptoms which the case presented. The wounds having been dressed, he sat down by the bedside, and entered into conversation with the patient, in the course of which the latter made the confession that he had taken poison 'very early in the morning, and before throwing himself out of the window.' On being closely interrogated as to the nature of the poison, he said it was strychnia, and that he had taken '*eleven* grains spread on bread and butter.' He moreover told when and where he had purchased it. Subsequent inquiry verified these last statements to the letter. On the previous day he had purchased eleven grains of strychnia at the shop of an apothecary near to where he lived, alleging that he wanted it for the purpose of

destroying rats. There is no reason whatever for doubting that he took the whole of this enormous dose.

"These disclosures he communicated calmly, and without apparent emotion; though he expressed deep sorrow for what he had done. All doubts as to the nature of the symptoms, and the cause of them, were now removed. A second medical man was called in, who concurred in the opinion that the symptoms were due to strychnia, and not to any injury received in the fall.

"By this time it became impossible to move or even to touch him, without exciting horrible convulsions, which shook not only the bed but the room. At the height of the paroxysm the body was raised off the bed, as in opisthotonos, and then fell heavily. These effects were produced even by the act of feeling the pulse, or moving the bed-clothes.

"The arms were thrown up above the head by the first attacks of spasms, but subsequently they were thrown violently forwards across the body, and greatly agitated. The eyes during the fits were open, not turned up or congested. The pulse became exceedingly quick, and the respirations were 44 in the minute. The thorax heaved much, and he said some urine was voided during the fits. In the intervals of the convulsions he was able to move his arms freely, though it was not noted whether rigidity entirely ceased in the muscles or not. The adoption of any kind of treatment seemed utterly hopeless. Early in the case he had vomited freely, but the matters ejected, which seemed to consist chiefly of some coffee he had taken shortly before, could not be collected. Again, about seven o'clock, after the administration of 20 drops of chloroform, which he swallowed with difficulty, the stomach was sick. To think of using the stomach pump was obviously quite out of the question.

"Shortly after this second attack of vomiting, the convulsions became more frequent and more violent until 11½ A.M., when he expired in one of the fits.

"Such are the facts with which I was favoured, and which I have given in nearly the same words as those in which they were communicated to me. So far as they go, they may be implicitly relied on; but there are some points which it is to be regretted did not receive more particular attention. To supply, if possible, this defect, I wrote to the gentleman who gave me the above history, seeking further and fuller information; and the substance of his replies I shall embody in the following few remarks:—

"On the day prior to the catastrophe, the subject of the case dined with his family at 6½ o'clock, and drank tea as usual about 9 o'clock P.M.

"There is no reason to doubt his having taken eleven grains of the poison. He confessed this himself; and the chemist stated this to have been the exact quantity he had supplied to him. Some uncertainty, however, exists as to the precise time at which the poison was swallowed. His own confession was, that he 'took it

very early in the morning, and before he went out of the window.' Consistently with this would be the supposition that throwing himself down from the window was entirely an after-thought, and only resorted to as a means of self-destruction on his finding the strychnia not sufficiently prompt in its operation. The family believe he spread the poison over night, which is rather confirmatory of the idea just thrown out, though they think he ate it whilst in the water-closet; but there is no evidence in support of this, and it is plainly contradicted by his own statement.

"The first effect of the poison began to show itself about $5\frac{1}{2}$ o'clock, or $5\frac{3}{4}$ A. M., and was announced by spasms of the lower extremities. A little later, it was remarked that the slightest irritation of the surface brought on these spasms. A fit of general convulsions next seized him; and this recurred again and again with increasing frequency and violence, until at $11\frac{1}{2}$ o'clock he succumbed: so that from the first symptoms of poisoning until the last embraced a period of six hours. The interval that elapsed from the *ingestion* of the poison until the occurrence of dissolution cannot be positively computed; but it must have been over six hours and a half, and very possibly may have been eight hours. This fact alone renders the case remarkable, and places it in strong contrast to the one recorded by Professor Geoghegan, where five grains of strychnia, taken shortly after a dinner of meat and potatoes, produced a fatal result within twenty-five minutes. In the case I have related, the long interval can only be accounted for on the supposition of the strychnia being of very infirm quality. It is hardly possible that any of it was rejected by vomiting, as this did not occur till after the first fit of convulsions (?), an hour at least from the time of its ingestion, and after decided effects had shown themselves. During the fits the body was arched forwards, so as to be raised off the bed, and the upper extremities were, from the first, very notably affected, the arms being much convulsed and thrown above the head, or across the chest. In the intervals of the fits, the pulse was very frequent, as was also the respiration; but he exhibited unimpaired intelligence to the last.

"The expression of the face was remarkably changed, and during the fits 'had very much the appearance of a true tetanic case.' Whether rigidity of the muscles continued after the subsidence of a fit cannot now be positively stated. Between the earlier fits he certainly was able to move the arms freely. After death, it was noted that they remained rigid and elevated, but were straightened without much difficulty. The face at this time was free from distortion, and presented an expression of calmness. He bore his sufferings quietly, and at no time did he utter any screams or loud moans. This differs from what was observed in the case reported by Mr. Adams, where the poisonous effects of the drug were ushered in by 'loud and repeated screams and moanings;' and hence Mr. Adams lays this down as one of the differential symptoms between strychnia tetanus and ordinary tetanus, of which

latter the commencement is silent, he says. I am disposed to think, however, that the presence or absence of this symptom will depend entirely upon the character and psychical condition of the individual.

"Perhaps the most remarkable circumstance in the foregoing case is the gentleman's escape from fracture or serious injury of any kind, after falling through a distance of at least thirty-five feet, and alighting on a flagged yard. If it be true that muscular action is a principal cause of fracture in falls and other such like bodily shocks which people unexpectedly and sorely against their will encounter, why then it seems not unreasonable to suppose that there should be less of this sudden and extraordinary contraction of the muscles in the case of the determined suicide, who wilfully and deliberately seeks death in this manner. In such a person the love of life is extinguished—even the animal instinct of self-preservation is totally subverted. No marvel that he is utterly indifferent to the consequences of *any* act, when he shrinks not from committing against himself a deeper injury than he could receive from the hand of any other man."

Dr. Moore read the following paper on *Scarlatina Faucium.*

"Few practitioners but have met with cases in which it was impossible to define with perfect certainty the presence of this affection. The diagnosis is more embarrassing when these cases of sore throat, without rash, occur during the prevalence of scarlet fever, and in persons in whom that disease has been already unequivocally developed. Called in to such cases, you naturally incline to lay the mischief at the door of cynanche tonsillaris, yet, though there is fever present, it is not of that sthenic inflammatory character so frequently met with in quinsy. On examining the throat you find a peculiar deep redness of the tonsils, uvula, and arches of the palate, and in many cases, though there is no very decided enlargement of the tonsils, at least nothing to prevent the patient swallowing fluids, yet there is almost total loss of the power of deglutition, the smallest quantity of fluid being rejected through the nose; you very frequently find a patch of dark-yellowish mucus deposited on the tonsil, as if resolution had taken place; but such is not its nature: it is of the same family as the grayish or yellowish-white membranous exudation covering the back of the pharynx; remove it, and you will find no loss of continuity, but the membrane presenting a redder appearance than natural. In the course of a few hours a similar deposition may take place. The appearance of the uvula in such cases will not guide you much in discriminating between these affections; it is usually more enlarged, deeply congested, and of a darker colour than in the ordinary cynanche. The tongue is coated with a dirty-white, creamy fur, and occasionally the papillæ may be prominent. In such cases, with scarlatina epidemic, you look for the presence of rash; none is to be found, and although the patient has assured you that he or she has had scarlatina, still there is something about the appearance of the throat, fauces, &c., and the character of the fever

(which I incline to call typhoid), satisfying you that it is not a case of cynanche tonsillaris you are called upon to treat. I cannot exemplify my views better than by detailing the following case. Not long since I was consulted by a lady, aged about fifty years, of dark complexion and lax atonic fibre, the mother of a large family. She complained of slight sore throat and stiffness in the cervical region with pain in deglutition; her skin was perceptibly feverish, and pulse quicker than natural. I ordered her a mild aperient, to inhale the steam of vinegar and hot water, and to take a hip-bath at bed-time. The following day I found this patient very feverish, evidenced not so much by heat of skin as by a quick pulse (100), and general constitutional disturbance, her appearance being most haggard and dejected. She had passed a bad night; her throat was more inflamed; I ordered her to take a castor-oil draught; to apply the compound camphor liniment around and under the jaws, and to continue the inhalation of the vinegar and hot water.

"On the fourth day from the accession of the first painful symptoms I find the following remarks:—'The lady had passed a wretched night, was delirious at times; pulse 110. The throat presented the following appearance:—There was deep redness of the tonsils, palate, uvula, and arches of the palate, for about two inches anteriorly. The left side of the throat was most engaged; there was slight enlargement of the left tonsil, and a patch of dark-coloured mucus rested on it, whilst a similar ropy exudation covered the back of the pharynx. The uvula was deeply congested, and twice its natural size, constricted in the centre, and resting on the tongue, it caused constant distress to the patient. There was almost total loss of deglutition; fluids, the only form of nutriment attempted, were returned through the nose. This resulted, not from any abnormal enlargement of the tonsils, but from the combined effects of the thick, tenacious secretion, and the total inability on the part of the patient to raise the uvula, which hung forward on the base of the tongue. There was considerable enlargement of the parotid and submaxillary glands, particularly on the left side. I examined the skin carefully for rash, but could not find a trace of it. Mr. Adams saw this case with me, and the following treatment was adopted:—A gargle, of decoction of figs, 8 oz., and nitrate of potash, 1 drachm; the patient to reapply the camphor liniment, and the throat to be touched with a solution of nitrate of silver, 15 grs. to 1 oz.; sulphate of magnesia in acid infusion of roses.

"Next day (fifth) the throat was much in the same state; patient slept little; raved; pulse very quick; continued the treatment as before.

"Sixth day. Less inflammation about the throat; pulse 90; fever subsiding; she passed a better night; prescribed the following:—decoction of pomegranate, 1 pint; dilute hydrochloric acid, 2 drachms; honey of borax, 1 oz.: to be made into a gargle; the application of the nitrate of silver to be continued.

"Seventh. Amendment continued; patient had a steady convalescence.

"This lady, as soon as she felt able, left for the country, and went direct to the house of a very near relative; all the younger members of this family became affected with scarlatina, and two of them died. Willan states that scarlatina faucium, as he calls these sore throats, is capable of communicating by infection all the varieties of this disease.

"In Graves' 'Clinical Medicine,' edited by Dr. Neligan, there is a case related of a lady having had sore throat, no rash, conveying the infection to a whole family; and, in connexion with this subject, the following remarks:—'That in acute and chronic diseases a constitutional affection may display its existence by only one or two of the numerous symptoms which usually accompany it. This is to be expected where you meet with scarlatina occurring for the first time in this form; but in the case I have detailed to you the patient had an undoubted attack of this exanthema in early life, and yet this second attack, in the masked garb of sore throat, was capable of conveying the infection, and propagating the disease in the most malignant form.'

"I think we may fairly conclude that the virus of scarlatina is more rife than is supposed, inasmuch as it assumes so many different phases. In Dr. Henry Kennedy's admirable treatise on the Epidemics of this disease, from 1834 to 1842, the case of a nurse is related in whom the virus ignited all the symptoms of continued fever, the patient having had the disease in an unequivocal form in early life.

"Dr. Bower Harrison, of Manchester, in his paper on Scarlatina, relates the case of a lady who had sore throat, having previously had scarlet fever; he thinks that the influence of the poison in this case gave rise to a complaint which was not distinguishable from the common cynanche.

"And now as to the question, how far these sore throats are prophylactic against a recurrence of the disease with or without rash? In my own person, on the first accession of the disease, I suffered from simple sore throat, and, although often exposed since to infection, particularly in the summer of 1853, I never had the disease with rash, but I have felt a sense of constriction of the fauces and difficulty of deglutition, with general malaise, whilst in close attendance on cases of these malignant sore throats. This I have been assured has been felt by many practitioners. My idea is, that the sore throat, in the first instance, without rash, is, to some extent, prophylactic against a return of a more severe type of this disease, but that it may recur again and again in these modified forms, which are deserving our most careful consideration, inasmuch as they are quite capable of conveying by infection the virus which may be developed in the most fatal form.

"In these remarks it is not my intention to introduce the different complications and sequelæ of this exanthema, but merely to state the treatment which I have found most effectual in such cases. As regards the constitutional treatment, we must be guided by the age and stamina of our patient. As a rule, in the early stage, the

use of purgatives is indicated, either a castor-oil draught, or the acid infusion of roses with sulphate of magnesia. In the case of a child, a grain of calomel with a few grains of rhubarb may be the treatment most judicious and easiest exhibited. The apartment should be kept cool and properly ventilated, occasionally sprinkling some solution of chlorinated lime; tepid sponging will be most grateful to the patients, taking care that they are thoroughly dried afterwards. In many cases the tepid bath at bed-time will be found to procure our patient a quiet night, when more direct soporific remedies fail, and at the same time promote the secretion of urine, which, in many instances, is a source of anxiety to the practitioner. There is no golden rule as regards nourishment; in the case brought forward it was indicated from the first, and in persons of lax, atonic fibre, it is our sheet-anchor; and, if not capable of being swallowed, it should be regularly injected.

"Fresh barm is not only antiseptic and slightly stimulant, but nourishing and laxative. I can recommend it with great confidence in scarlatina where there is great swelling of the parotid and submaxillary glands. Early in this disease the local treatment should be somewhat as follows:—Apply large poultices (which in many cases afford great relief) or a few leeches under the jaws; occasionally counter-irritation. The inhalation of the steam of hot water, or vinegar and hot water, is most grateful, and, besides, induces diaphoresis; gargles are naturally indicated, and, where the patient is an adept in using them, frequently prove very serviceable. The 'decoction of figs and nitrate of potash' is an agreeable emollient, and a judicious one to start with. After the third or fourth day we may prescribe a more astringent gargle with good effect, such as the decoction of pomegranate bark, with hydrochloric acid and alum or borax; whilst at the same time we apply a solution of nitrate of silver in the proportion of 12 or 14 grains to the ounce of water, first having sponged off the ropy mucus. Bretonneau ascribed much success to the 'muriatic acid' treatment in these cases. In the cases of children, where gargles are inadmissible, and where our only applications are either tinctures or the solution of nitrate of silver, the most satisfactory mode of applying either is by attaching a piece of sponge to the top of the finger of a kid-glove, and, having moistened it in the solution, apply it well to the fauces, not omitting the pharynx.

"And now, in conclusion, I will mention the inferences which seem to me satisfactory:—

"First, that these sore throats which I have attempted to describe are prophylactic against the recurrence of scarlatina with rash.

"Secondly, it is a reasonable deduction that the virus of scarlet fever may operate in constitutions which cannot develop this disease in the ordinary forms, but may give rise to sore throat, general malaise, &c., all of which are modifications of this exanthem, and capable of extending the disease.

"Thirdly, that during the prevalence of scarlatina these marked

symptoms, occurring more particularly in a patient who has previously had an unequivocal attack of scarlatina, are deserving our most serious attention, and the greatest caution is to be observed on being interrogated as to their nature and liability to communicate infection."

Sixth Meeting, May 6th, 1857.

Dr. Osborne read a paper on *Medical Inhalations*, detailing the effects observed by him from the employment of vapours of cubebs, turpentine, conium, burning touch-paper, &c., &c.

Dr. Lees mentioned a case of *Sthenic Purpura Hemorrhagica*, in which he tried ergot of rye without effect; but which was easily overcome by the use of gallic acid.

Dr. Lees also exhibited a beautiful drawing of *Apoplexy of the Kidney*. The subject to whom it belonged had died of typhoid fever.

Dr. A. Smith related a case of *Pneumonia* which occurred in Sir P. Dun's Hospital. The case was treated successfully by rapid salivation. In this case there was "protrusion of the intercostal spaces and diminished vocal resonance." Dr. Smith was of opinion that mercury was necessary for the cure of pneumonia.

Dr. H. Kennedy read the following case of *Disease of the Heart*:—

"Though our knowledge of disease has increased much within the last quarter of a century, it must still be admitted that much remains to be accomplished. This is not the place to enter at large into the various subjects which require further research; but to one, as connected directly with the case about to be brought under notice, I would direct attention—I mean the combinations of disease which we so often meet, and which may prove so difficult of diagnosis. As an example of this I might adduce chronic disease of the kidney, on which, as all are aware, acute affections are so very apt to be engrafted. But though disease of the kidney has been taken as being possibly the best recognised example of the frequency with which acute supervenes on chronic disease, still the same course of events is very liable to occur in other chronic affections. Thus in the progress of phthisis we may have bronchitis, pneumonia, or pleuritis set up; or, what is not so generally known, we may have acute disease occurring in the brain, throwing the chest symptoms completely into the shade. Neither do chronic affections of the heart offer any exceptions to the general remark: for all know how frequently acute diseases supervene on the several chronic affections of this organ. It is still possible, however, that these are not yet as fully recognised as they deserve to be. Dr. Stokes says, in his last able work—the diagnosis of the combination of diseases, even in so small an organ as the heart, is still to be marked out. In this I

fully concur, and, as bearing directly on the point, would bring under the notice of the Association the following case:—

"Case.—Very early in the morning of the 9th of April of this year I was brought to see a lady, aged fifty-four years, who, I was informed, had been up and about five days previously, when she was attacked with what appeared to be a heavy cold, confining her to bed. I learned that she had been subject to cough for some years, and was liable to severe exacerbations of this, as also of dyspnœa, which latter symptom seemed to have increased much within the last four months, and was particularly distressing on ascending a height; on several occasions she had spent the entire night coughing, at the same time that she expectorated a good deal, but she never spat blood. I also learned that, about two years previously, she had what I could not doubt to be an attack of gout in one foot. There were also causes which had given her great anxiety of mind, and within the last year her friends observed that she had lost flesh considerably. Such were the antecedents of the case.

"My first glance at the patient conveyed the impression that she laboured under a chronic and wasting disease; for she was emaciated, her aspect sallow, and in a very marked degree unhealthy. There were some dyspnœa, and occasional cough, but neither to a painful degree, nor, when asked, did she admit of any distress or pain whatever, and she was asked on this point again and again. There was a certain amount of fever present: her tongue was slightly furred; her skin a shade above the natural temperature, and her pulse about 108, perfectly even in its beats, but of a very small caliber; the bowels were confined, and, apparently in consequence of this, there had been some vomiting, for the latter ceased when the bowels acted. She had no rigor at any time.

"The physical signs were, a clear percussion everywhere, with a corresponding clearness of respiration, almost amounting to puerility, and over the entire chest bronchitic râles, confined, however, to the larger tubes. To the hand placed over the heart a very marked impulse was communicated, out of all proportion with the pulse at the wrist, which, as I have already stated, was remarkably small; but neither to the hand nor the stethoscope was the heart's beat of that character which conveys the idea of hypertrophy. The impulse, though strong, was limited, and what might be called abrupt; the two sounds of the organ were quite distinct, nor was there any morbid sound whatever, and percussion did not appear to me to be different from what is natural.

"In addition to the symptoms just given, there were others of a totally different character, which it has appeared to me best to speak of separately, as possibly by this plan the case will be more forcibly brought forward. These were entirely referable to the brain. There was a marked frown on the forehead, whilst the pupils were contracted to a pin's point, and so fixed that the absence of light seemed not to affect them. There were besides, every now and then, twitchings of the muscles of the face, which, it was

stated, had been more marked; and also subsultus of both arms shown occasionally at the wrists. It could not be said that the patient had any wandering, for she answered directly when spoken to. Still the people round thought her manner strange, and so it appeared to myself.

"Under all the circumstances, and in consultation, it was determined to put a blister over the heart; to have the bowels quietly freed, and to give wine.

"The patient was visited late in the evening of the day: indeed the only day I saw her. The only marked change was a considerable increase in the subsultus of the arms; but there was no urgent dyspnœa, nor any alteration in the pulse. There was, however, some perspiration of a clammy kind, and the entire appearance of the patient led me to fear she might not live through the night. A strong turpentine stupe was directed, after which she slept some hours; but on awaking complained of her breathing, and shortly after expired, just seven hours from my last seeing her.

"Though the post-mortem examination was not as complete as could have been desired, still I believe it cleared up in great part, if not entirely, the obscurity which hung about the case. The body was emaciated; the soft parts over the thorax being entirely devoid of fat, but the chest was tolerably well formed. The lungs might be said to be comparatively healthy; there was a strong adhesion at the upper and back part of the right, and there were marks of chronic bronchitis on the mucous membrane. On opening the pericardium, I found to my surprise one of the forms of pericarditis. It was confined exclusively to the base of the heart and great vessels, and the effusion was of the character of thick pus, so thick as to be retained in its place as long as the heart lay *in situ;* but when the organ was removed, so that gravity came into play, the pus then began to spread itself slowly over the rest of the heart. Under the pus I could detect the very finest coating of lymph; whilst, in the strictest sense of the term, there was no liquid effusion whatever. The quantity of purulent matter would probably have measured an ounce. The heart was larger than natural, and was guessed about twelve ounces weight. In addition, its texture was much degenerated, being of a pale tawny hue, and very friable, so much so that, when drawing it forward to cut across the great vessels, my finger sunk into the posterior surface. The whole organ was degenerated; but it was more especially so in the right ventricle, where very little muscular structure could be seen. The valves were perfectly healthy. The liver had commenced to take on the fatty degeneration. This was all the length to which the examination could be carried.

"Such is the sketch of a case which appears to myself of more than common interest, and presents several questions of moment, to some of which I shall venture to call the attention of the Association. It is the first case I have met where pericarditis supervened on a fatty heart; neither have I read of anything similar; and it

is more than probable that the physical signs during life were modified by this very combination. It will be recollected that there was no frottement or other morbid sound present; and I think it may be stated that they would have been detected had they existed; for, though I did not look for frottement, I did look particularly for some form of soufflet, and, had the former existed, it would have been heard. This is not the first instance I have met, where, with a pericarditis, there was no frottement; and it appears to me that, in this particular case, it is to be explained by the nature of the effusion, which was so different—being actually pus—that the heart's motion could not have generated a sound. And this leads me to speak here of the diagnosis. It is scarcely necessary to state that the pericarditis was not detected during life. The age of the patient, the denial of pain, the absence of frottement and rigor, and of any of those general signs which actually accompany the disease, such as a strained posture, dyspnœa, &c., all combined to lead me astray, and indeed to put the idea of any acute disease out of my head. Hence, post-mortem examination was the first means of declaring the existence of pericarditis. It is but right to state, however, that I was convinced, during life, of the presence of a fatty heart; and the diagnosis, in this respect at least, proved to be correct. Before concluding there will be occasion to allude to this point again.

"Of the nervous symptoms present it need only be said that they tended to complicate a case already sufficiently so. They did not give me the idea that they were due to mischief going on in the brain; and with the knowledge gained by the post-mortem examination they may now, I think, be fairly attributed to the pericarditis. We know that this disease occasionally gives rise to nervous symptoms of a very marked character. It has not chanced to myself to see such before in connexion with pericarditis alone; but I have seen them in cases of pleuritis and pericarditis conjoined, and more particularly where the serous membrane covering the diaphragm was inflamed. I have also seen exactly similar nervous symptoms in fever connected with lesion in the small intestine—post-mortem examination proving, that while the latter existed there was nothing in the brain to account for the symptoms[a]. On the whole, then, I would repeat, that the nervous symptoms present in the case now detailed would appear to have been sympathetic or reflex actions, as they are called at present.

"It has been already stated that the diagnosis of fatty heart was made before the death of the patient. To enter into this important question at large would far exceed my present limits. There is one point, however, which, as illustrated by the case, I would direct attention to, believing it to be one of moment, and, as far as I am

[a] "To the nervous symptoms arising in fever I see that my friend Dr. Hudson has directed attention in an able Paper just published in the May Number of the Dublin Quarterly Journal."

aware, not yet recognised. It will be recollected that in the case given there was no murmur heard over the heart; in fact, the two sounds were clear and distinct: while on examination the valves were quite healthy. Now this very absence of morbid sound was one of the reasons why the diagnosis of fatty heart was made. But this requires explanation; for it might appear strange that healthy sounds and valves could be made a cause of the diagnosis of disease, and that disease situated in the heart itself. Yet, so it is. It is now upwards of seven years since a short paper on fatty heart was read before the Surgical Society of Ireland. In it, besides other points, I took occasion to call attention to one in particular which seemed of some moment, and which came under my notice whilst making inquiries on the subject. I found that in the details of cases of fatty heart, it was often stated that the valves were found healthy. This was at first, however, but an impression; and as impressions are very apt to be erroneous, I set about making inquiries which might settle the point. In a short time some fifty-three cases of fatty heart were collected; and out of these no less than forty-three were stated to have had healthy valves, whilst even of the remaining ten it was stated that of six of them the valves, though diseased, were capable of performing their functions. The proportion, however, of 43 to 10, that is, of 4 to 1, appeared to be sufficiently striking. Since then I have continued noting all cases of the kind which came under my notice, and though not yet tabulated, they confirm in a very marked way what is stated above. Hence, then, the conclusion may fairly, I think, be arrived at, that in cases of fatty heart valvular disease is rare; and when it even does occur, it is very generally of a peculiar kind, the valves then being thick and leathery, and in many instances capable in this state of performing their natural functions. In point of fact, ossific deposit in the valves may be said to be rare.

"A recognition of the fact just stated would appear to be of much moment at the present period, when so much attention is being given to the subject of fatty heart. I have said that it has enabled myself to diagnose the disease; I mean as far as any single sign could, and this, not in one but several instances. A very marked case of the kind occured within this fortnight, where, through the kindness of my friend Dr. Shannon, I was able to put the matter beyond dispute, by obtaining a post-mortem examination. Of course, in the cases I speak of, there were symptoms present, pointing directly to the heart as being the organ at fault. Hence the diagnosis was made up of contraries, if I may so speak. There were signs pointing to disease of the organ at a time when its sounds were healthy.

But other thoughts arise out of the fact stated. Thus it proves, and this is beyond any doubt, that with the sounds of the heart healthy, there may at the same time exist the most serious state of disease of its structure; and hence the great necessity for caution, if, for example, we are called on to give a certificate for in-

surance. The converse of this, too—though not by any means so well established—may be also given: that is, if we find a rough soufflet in the heart, the presumption is that the organ is not fatty. How far the thickened state of the valves, of which I have spoken, alters the natural sounds, has yet to be determined. This much I may state, that in some of these cases the sounds are not changed: and whilst in others they are muffled, as it were, no morbid sound at all being present, the accurate diagnosis of this form of thickened valves, especially of the aorta, presents yet a wide field for investigation.

"In the last place, the existence of healthy valves, at the same time with fatty change of the texture of the heart, leads to the question of treatment. And here I cannot but state my conviction that with an improved diagnosis, by which I mean the detection of fatty change at an earlier period than has hitherto been done, we may hope, not only to arrest, but I would go further and say, cure the disease. No one is more aware of the difficulties which surround the subject than myself; whilst to some, I know, the very idea of a cure seems absurd and impossible. In the later stages of fatty degeneration, when, unfortunately, the disease is, at present, only apt to be recognised, cure may be considered impossible. But at an earlier stage, and, it will be recollected, with healthy valves, I really can see no good reason why the disease might not be arrested. Inviting though the topic be, however, it cannot be pursued farther on this occasion.

"In conclusion, I would throw into a series of propositions the points here brought under your notice:—

"1. That acute pericarditis may occur in connexion with fatty heart.

"2. That this complication may be farther complicated by the presence of cerebral and nervous symptoms.

"3. That this state of the heart and pericardium may not be attended by frottement.

"4. That fatty heart is very generally joined with a healthy state of the valves.

"5. That one of the signs diagnostic of fatty heart is the existence of healthy valves and sounds.

"6. That healthy sounds and most serious degeneration of the organ may coexist.

"7. That the cure of fatty heart, in its earlier stage, comes within the range of possibility."

Seventh Meeting, June 4th, 1857.

Dr. Churchill read the following paper on *the Employment of Carbonic Acid Gas* in certain diseases:—

"The affection in which I have tried carbonic acid gas most frequently is irritability of the bladder. This is a secondary affection, well known, I am sure, to all who have much to do with diseases of females. In by far the majority of cases, it is secondary to some irritation of the uterus or ovaries, and may occur either

early in such diseases, or towards their decline, and lasting very often long after the primary affection has been cured. It has a strong resemblance to the ordinary form of irritable bladder, and, in some few cases, may prove as intractable, although, generally, it is much more manageable. In by far the majority of cases I have seen, the urine is acid, in some cases remarkably so. But the irritation does not appear to be caused by the passage of the urine, and there is no scalding; but, after the bladder is emptied, the powerful effort of the bladder to expel a few more drops is very distressing. The suffering is very considerable at these times, and there is a constant sense of uneasiness, sometimes amounting to pain; in the repose of the bladder, in the severer cases, moreover, the necessity of passing water is very urgent and repeated. I have known the attempt made twelve, fourteen, and twenty times during the night, and oftener during the day; one patient assured me that she could scarcely abstain for four minutes during the day. I do not think that the entire quantity is much increased, nor is it diminished.

"I have already mentioned that the urine has almost always an acid reaction; besides this, I have, in some cases, observed copious deposits of the lithates and purpurates, and in all severe and long-continued cases more or less mucus: in one case only was the straining accompanied by striæ of blood.

"The condition of the uterus which I have generally observed in these cases was one of considerable congestion, caused, aggravated, and continued by some form of menorrhagia, i. e. either too frequent menstruation, or excessive discharge at the regular periods, or, perhaps, a too frequent return, as well as an excessive quantity. In a few cases there was granular erosion, and in some a degree of ovarian irritation, which I believe was itself secondary to the affection of the uterus.

"The only exciting cause which I have found influential is cold, exposure to a cold atmosphere, to cold winds, or damp feet.

"I have said that, as a general rule, this secondary affection is more manageable than the disease ordinarily described as 'irritable bladder,' and I cannot doubt that many have cured such cases very often. Warm hip-baths, alkalines, sedatives, opium, pessaries and suppositories, tonics, &c., in various forms, will succeed, and it is possible that in many cases the cure of the primary affection may be followed in time by the spontaneous subsidence of the vesical irritation.

"But there are cases much more obstinate, and which resist all the ordinary remedies for weeks, months, and even years. It was with such a case that, with Dr. Lees' permission, I determined to try the carbonic acid gas. This case, M. A., I first saw in another hospital for a granular erosion and congestion of the cervix uteri, which was relieved by the usual means. I do not remember that she made prominent mention of the condition of the bladder; at all events she left the hospital, and I lost sight of her until she entered the Meath Hospital under Dr. Lees, who asked me to exa-

mine her, and by whose kindness I am allowed to bring forward these particulars. I found the cervix free from disease, and her whole complaint directed against the bladder or urethra. She said that she could only retain her water for a short time, that she sufferred great pain and tenesmus immediately it was passed, whether she passed much or little at a time. The quantity was not increased, but it came away in spoonfuls, and she had constantly an uneasiness on the pubis and round the loins. The urine was acid, with considerable mucous deposit, and sometimes striæ of blood in the mucus. Her health was suffering considerably, and especially from want of sleep, for she had to pass water twelve or fourteen times during the night, and once as often as eighteen. The demand was as imperative and nearly as frequent during the night as during the day. The pulse was quiet; tongue slightly furred; appetite bad; and bowels pretty regular. Menstruation was regular. At first we suspected it might be a case of urethritis, and the more as there was one part of the urethra somewhat painful to the touch of the catheter. But we soon saw that the bladder was prominently involved, and we tried alkaline medicine, opium by the mouth and in the form of vaginal pessaries, and in enemata, with hip-baths. Some benefit was derived from these measures, but the case was still unsatisfactory when Dr. Lees allowed me to try the carbonic acid gas to the vagina. From the first she derived more relief than from any other remedy, and its repetition was gradually followed by a subsidence of all the distressing symptoms, until she was able to leave the hospital in a state of comfort.

"Some weeks after she called at my house, first, as she said, to tell me how much better she was, and to thank me, and also to apologize for having told me a lie as to the duration of the complaint, which, instead of a few months, had been of nine years' standing, and for which she had undergone a great variety of treatment. Her excuse was that she thought she would have been sent out of hospital if we knew that she was such an 'old customer.'

"The second case, Mrs. D., remained in a delicate state after her confinement in the summer of 1856, which was increased by nursing. On the 7th of November she was suddenly seized with violent pain, accompanied by desire to pass water very frequently, and vesical tenesmus. The urine was acid, mixed with some mucus slightly tinged with blood. Pressure upon the upper wall of the vagina gave some degree of pain. Alkalies, opiates, fomentations were tried, but with little success, before I saw her. I determined to try the carbonic acid gas, and I can truly say that her steady improvement dates from the first use of it. It was administered at first every second day, and afterwards every day, or even twice a day, according to the amount of distress. Any slight increase of distress was instantly relieved by it. She has now been some time quite well.

"Case III.—Mrs. B., aged 43, has had a large family, and is a large fat woman. She had been under my care for some time for

congestion and erosion of the cervix, and enlargement of the uterus generally, with some depression. She menstruated every sixteen or seventeen days successively. Under appropriate treatment the uterus had nearly resumed its natural size and position, and the erosion was quite healed, when she took cold during the prevalence of the north-east winds. She was attacked by uneasiness, and occasionally severe pain in the bladder, with frequent desire to pass water, and tenesmus afterwards. The urine was acid, without deposit, and only occasionally with a trace of mucus. Sedatives and alkalies were used, at first with little if any benefit. Poultices and fomentations afforded temporary relief, and I proceeded to try the carbonic acid gas. Some relief was afforded at first, but I do not think the progress was so rapid in this case as in the others. Under its use, however, every second day, she has now quite recovered. I ought to mention that when the pain was most severe she obtained great relief from one of the Edinburgh suppositories, containing half a grain of morphia.

"Case IV.—Mrs. A., aged 34, married, but without children, caught cold first after a menstrual period, and was attacked by a frequent desire to pass water, with great vesical tenesmus, and pain over the bladder. She was a delicate woman, and the loss of rest was felt very much. The urine was acid, containing abundant lithates and some mucus; the use of one of the morphia suppositories relieved the severe pain, and the administration of carbonic acid gas every second day for about a fortnight completely cured the irritability of the bladder.

"I need not trouble the Society with further cases. I have related them because they were good examples of the disease, and of the effect of the remedy. They occurred under somewhat different circumstances, differed in the length of time they had existed, and in the amount and variety of the remedies used, but agreed in this, that carbonic acid gas afforded quicker and more decided relief than anything else. I feel that more instances and greater experience are necessary to draw any very certain conclusions, but I hope I have said enough to recommend the remedy to the profession.

"In the next place, I would beg to direct attention to a reflex irritation, more or less familiar to all: I mean that produced by certain conditions of the cervix or entire uterus upon the stomach, as in the instances of hysteric vomiting, and the vomiting of pregnancy; and the probability of affording relief by acting upon the uterine centre.

"Some years ago I was attending a lady with erosion of the cervix, accompanied by great uterine irritation and dysmenorrhœa. Throughout she was troubled by occasional nausea, particularly in the morning, and this was even more marked as the disease progressed towards cure. Latterly I used the strong tincture of iodine as an application to the cervix, and she herself pointed out to me that for some days after its use she remained perfectly free from sickness of stomach. Long after the cervix was apparently

quite well, she experienced occasional returns of this morning sickness, which was instantly and invariably relieved by the application to the cervix. As this clearly was a case of reflex irritation, whose *point de départ* was the uterus, I was led to think that perhaps other reflex irritations, having the same origin and the same seat, might be relieved by applications directed rather to the locality of the former, than the latter; and I determined that the next instance of excessive vomiting of pregnancy I met, I would treat in this manner. Years passed, however, without my seeing a case sufficiently aggravated to make the patient willing to submit, or myself willing to propose, the necessary application. Last November or December, however, I was requested to visit Mrs.——, who was then in the sixth or seventh week of her fifth pregnancy. She had borne two children at the full time, and had two miscarriages, and with all she had suffered from aggravated vomiting, commencing soon after conception, and continuing until the uterus expelled its contents. Each time she was exceedingly reduced, so much so that it had been a question of inducing abortion or premature labour, but this trouble was spared by its spontaneous occurrence.

"When I first saw her she was confined to bed, quite unable to bear the upright position. She had menstruated for the last time about seven weeks before, and for about six she had been incessantly sick, night and day; she slept little or none, and retained literally nothing on the stomach, even a teaspoonful of cold water was instantly rejected, and her distress—I might truly say, her agony—was extreme; she was exhausted, pale, and emaciated, very despondent, and only hoping that a timely miscarriage would relieve her of her misery. She had tried various medicines, which *could* do her no good, because they were not retained a moment. In addition to the irritability of stomach, she was much annoyed by diarrhœa. Here there was a fair case to try the effect of local applications to the vagina and cervix, and I was especially led to do this because medicine by the mouth could not get fair play.

"I first tried an opium pessary in the upper part of the vagina, then repeated applications of tincture of iodine; but although these afforded some relief, they did not satisfy me, and I determined to give the carbonic acid gas a full trial. I applied it every second day, and we had not used it a week when I found out that she had some intervals of rest from vomiting, some sleep, and at length that she had retained some fluid, and afterwards some solid food. Of course she had still much distressing sickness, far beyond the average; but, encouraged by the slight improvement, I persevered, and gradually the vomiting became less severe and less frequent, the rest longer, and the sleep better. The appetite returned, and the greater portion of food was retained. By the end of the third month of pregnancy the sickness had left her, all threatenings of abortion had ceased, she rose to breakfast, took her meals with her family, and was able to drive out.

"It is true that in ordinary cases the vomiting of pregnancy lasts

but about three months, and this ceased after three months; but then it must be remembered that the cases of excessive vomiting are generally more prolonged; that in her previous pregnancies Mrs. —— suffered to the end; whereas the mitigation in the present instance commenced at the end of the second month.

"She is shortly expecting her confinement, and is so much improved in health and appearance that, when she walked into my study the other day, I did not know her.

"The two points of interest to which I beg to call especial attention are—the attempt to treat the case locally, which I believe has never been tried before; and secondly, the favourable effect of carbonic acid gas for this purpose.

"The last case with which I shall trouble the Society is one of hysterical vomiting treated locally. The patient is a delicate lady from the country, who some time ago was treated in Edinburgh for uterine displacement (retroflexion). When there, a mixture was ordered for her, containing tartar emetic, of which she took by mistake a fourfold dose, and the result was, of course, excessive vomiting. That she describes as the commencement of the present complaint, which, besides very delicate health, consists in vomiting every evening, and sometimes in the course of the day. The vomiting does not occur immediately after a meal, but some two or three hours afterwards. She was treated most judiciously by the practitioner in the country under whose care she was, and I think every remedy for the stomach was tried, and failed. Then it was suspected that there must be ulceration or some organic disease of the stomach; and she was sent up to town, first, for me to ascertain specially the condition of the uterine system, as she had suffered from misplacement, and then from erosion; and secondly, that Sir H. Marsh should be consulted as to the existence of organic disease of the stomach. I may say at once that, after a patient and careful investigation, Sir H. Marsh decided that the symptoms did not warrant that conclusion. I found the cervix uteri tender, red, but not much swollen, and not abraded; there was some degree of enlargement of the body, and partial retroversion; no abdominal pain, and no tenderness. The patient had a pale, worn, suffering appearance, and was very thin.

"As we had agreed that there was no disease of the stomach, and that the case was probably one of the varieties of hysteria, or hysterical vomiting, I determined, on the failure of some remedies advised by Sir H. Marsh, to try the effect of treatment directed to the uterus.

"I first tried the carbonic acid gas, but I cannot say that much benefit was derived from it: it seemed to soothe the parts, and I think the vomiting was not quite so frequent, but that was all. I therefore determined to try the effect of the strong tincture of iodine to the cervix, and under this treatment she rapidly improved. The cervix has become full, and much less tender; the uterus is less, and has resumed its natural position without mechanical aid; but the menstruation is still scanty. The vomiting has almost ceased; it

only recurs occasionally, and not severely, and she is able to take a variety of food with comfort, which she has not been able to do for a year and a half. She has gained flesh, and is now able to take a good walk, such as she has not taken for years. In short, she has now had a month of such health and comfort as she has not enjoyed since the commencement of her illness. The case is still under treatment, and I am in great hopes of a successful result; but considering the ordinary and uncertain character of these hysterical disorders, it would be presumption at present to pronounce the case cured, nor indeed should I have brought the case forward now except for the corroboration it affords of the results obtained in the previous case by local treatment."

Dr. Atthill brought forward a case of *Abnormal Enlargement of the Labia and Nymphæ removed by the écraseur*:—

"The subject of this case was a young woman, a servant, aged 30, who applied to me under the following circumstances:—She stated that she was suffering from a tumour of the pudenda, which had existed for a considerable time, but of late had caused her so much pain and inconvenience that she was unable to work, and obliged to confine herself to the recumbent posture. On examination I found that the whole of the external organs of generation were in a state of disease, both labia and nymphæ being greatly enlarged, the most remarkable enlargement being superiorly and to the right side, where was situated the tumour for which she sought relief, the other parts exhibiting, in a minor degree, traces of the same disease.

"This tumour, which was of the size and somewhat of the shape of a large saucer, seemed to consist of the right labium and nympha, enormously hypertrophied, the adjoining parts being also implicated in the diseased mass, and forming one irregular tumour extending across and completely overhanging the orifice of the vagina. Its superior surface was covered with skin, which was endued with very little sensibility, its under surface was lined with mucous membrane continuous with that of the vagina. The skin covering the mons veneris also participated, to a certain extent, in the disease, being thickened and nodulated.

"The clitoris could not be distinctly made out, but I believe it was included in the general mass of disease; the tumour I remarked occupying its position, and there being one point on its under surface which was slightly sensitive. The patient stated that ten years ago she suffered so intensely from pruritus as to be obliged to tear herself, in her efforts to obtain relief, which were, as is usual in such cases, ineffectual. Modesty prevented her seeking professional aid. At the period she declares no swelling whatever existed. At last, after enduring great torment for two years, she spoke to a nurse-tender, who procured a wash for her, which only aggravated her sufferings by causing great pain, followed by inflammation; from this period we may date the commencement of the growth of this large diseased mass. At first the tumour only attracted notice after

she had been engaged in a hard day's work, and would nearly disappear before morning; but gradually, though very slowly, it increased in size, and her sufferings were augmented in proportion until at length walking or standing gave rise to such intense pain that she was obliged to give up all thoughts of earning her bread, and in this state she applied to me.

"From the first I decided that any palliative treatment would be useless; and as she expressed herself ready to undergo any operation which afforded her a prospect of relief, I told her I would undertake it, and brought her into hospital. Dr. Beatty and Dr. Churchill, who saw the case, fully concurred in this opinion, the only question being what was the more preferable operation; for severe hemorrhage was to be dreaded from removing so large a tumour from so vascular a part. After some hesitation, therefore, we decided to use the écraseur, the patient being first brought fully under the influence of chloroform.

"I commenced the operation by piercing the centre of the mass with a bistoury, along the blade of which I passed a probe attached to the écraseur by a strong ligature, by means of which the chain was drawn through the wound: the object of this step was to enable one-half of the tumour to be removed first, for the entire mass was so large and so irregular in shape, that it would have been impossible to include the whole at once. The instrument being adjusted, I proceeded to cut through the lower segment first; it took nine minutes to accomplish this. The instrument was then readjusted so as to include the upper portion, the removal of which occupied seven minutes more, the whole period during which the écraseur was worked being sixteen minutes, and from first to last the operation occupied twenty minutes,—a long time, no doubt, but then the patient, being under the influence of chloroform, suffered no pain, and I do not think there were two drachms of blood lost; the surface of the wound was clean and even, and no ligature was required; after the operation a light water-dressing was applied, and the patient left quiet. For some hours subsequently she complained of severe pain in the part; this gradually subsided towards evening; a full opiate was administered, and she passed a quiet night; slight superficial sloughing from the surface of the wound followed, but she recovered without a bad symptom; the pulse never rose above 80. She went out in about a fortnight, quite well. I saw her the other day. She is now in a situation, and states that she suffers no inconvenience whatever. The instrument I used was one Mr. Collis has operated with several times, and on each occasion with success. I think, from what I have seen, that the écraseur is well adapted for removing tumours, &c., from parts from which much hemorrhage is to be dreaded; but certainly I would not venture to use it unless the patient were fully under the influence of chloroform, as the suffering would be so great, and the time occupied by the operation so considerable."

TRANSACTIONS OF THE COUNTY AND CITY OF CORK MEDICAL AND SURGICAL SOCIETY.

(*Continued from* vol. xxiii. p. 487.)

SESSION 1856–57.

March 25, 1857.

Dr. R. Corbett, Vice-President, in the Chair.

Hypertrophy of the Heart; Aneurism of the Ascending Aorta.—Dr. Finn exhibited pathological specimens of the above diseases:—

Thomas Deluary, a labourer, aged 36, of short stature and stout conformation, was admitted into the North Infirmary on the 11th March, 1857. About a year previous to this date he had been treated for apoplexy and hemiplegia in the workhouse hospital. After submitting to treatment for a fortnight in that institution he was dismissed, much improved in health, but still complaining of a sense of numbness in the left hand and arm. During the past winter he was again admitted into the workhouse hospital for palpitations and dyspnœa, and after leaving was received into the North Infirmary, on the recommendation of Dr. O'Flynn of this city, under whose care he had been for a short time.

The symptoms on the occasion of his admission to hospital were as follows:—Face and neck œdematous; turgescence of the jugulars and of the subcutaneous veins immediately beneath the clavicles; the former were pulsatile, particularly at the right side. He complained much of headache, which was greatly aggravated by decubitus on the left side, paroxysms of coughing having been induced by this position. His habitual decubitus was on the right side. There existed the physical signs of general and capillary bronchitis. The area of cardiac dulness was much extended, and a loud murmur was heard over the region of the heart generally, loudest at the apex. A murmur was also propagated along the ascending aorta as far as the commencement of the arch, at which point it presented its maximum intensity. This murmur differed from the preceding in being louder and rougher in its character. Death took place quite suddenly on the 25th of March.

Autopsy.—On exposing the lungs a small quantity of serum, slightly tinged with blood, escaped from the cavity of the right pleura. The right lung was generally adherent to the costal pleura; the attachments presented varying degrees of firmness, those corresponding with the third and fourth ribs offering the greatest amount of resistance to separation. The right lung, anteriorly, was solid and indurated; its surface was pale, and a section of the interior exhibited a corresponding appearance; in the posterior and dependent parts there existed considerable congestion. Several large

clots were discovered in the left pleura; these clots appeared to have been derived from a breach of surface in the venous trunk. The pericardium, which had been the seat of recent inflammation, was united to the heart; the medium of union, however, was very soft, and easily broken up. The heart was hypertrophied, and weighed twenty-four ounces; the mitral and aortic valves were much congested, and swollen to such an extent as to present a serious impediment to the movement of the blood through the left side of the heart; yet there existed in either no structural change calculated seriously to interfere with the occlusion, more or less complete, of their respective orifices. Immediately above the aortic valves the arterial canal abruptly widened into a large sacculated aneurism, extending to the commencement of the arch, but which more particularly involved the posterior aspect of the vessel. In the sac no fibrinous coagula were discovered, nor had perforation or rupture of its walls occurred.

Remarks.—This case presents a rare example of thoracic aneurism merely playing a mediate part in terminating life, as the fatal result in this instance must be referred either to the breach of continuity in the venous trunk, or to a recurrence of the cerebral symptoms, from which this individual previously suffered[a]; which symptoms may have been easily reproduced by the assemblage of pathological changes affecting the thoracic viscera, as above noticed. The murmur heard over the site of the aneurism probably owed its existence to the abrupt *détour* of a considerable portion of the blood-wave towards the posterior part of the sac. The frequent, if not habitual absence of a bellows murmur, in aneurisms occupying the ascending aorta (in which fibrinous coagula have been largely deposited), would suggest some relation at least between the empty condition of the sac and the murmur developed in this instance.

April 8th, 1857.

Dr. Finn, President, in the Chair.

Dr. S. Henry Hobart read a report of the two following cases of *Tetanus*[b]:—

Case I.—John O'Neill was admitted into the North Infirmary, February 10, 1853, for a contused wound of the foot; the injury had been received by a heavy beam of timber falling on the part; several of the metatarsal bones and phalanges were fractured, and the soft parts severely lacerated. 13th. The three larger toes appear gangrenous, and this condition extends to the middle of the metatarsus, where a line of demarcation is beginning to appear.

[a] It is to be regretted that the brain was not examined; it was only by the intervention of a police constable that permission was obtained to examine the thoracic viscera.

[b] He also made some remarks on the subject of amputation, &c., in this disease, and on the use of chloroform, nicotine, the wourali poison, in it, which are published as an original communication at page 133 of the present Number of this Journal.

17th. Line of separation well marked; toes quite black. 21st. The sphacelated parts have separated, leaving a perfectly healthy ulcer. 22nd. Complains of stiffness of the masseter muscles, with pain extending to the back of the neck; he was directed to take three grains of quina three times a day. 23rd. Stiffness of muscles has increased, but he can still open the mouth pretty well, and is not affected with spasms; to continue the quina. Towards evening he got some twitches of spasm in the back of the neck. 24th. Decidedly worse. Spasms becoming more severe, affecting the back of the neck, and, to a slighter extent, the muscles of the back. On administering chloroform the muscular contractions were greatly diminished, but not entirely relieved; the action of this anæsthetic was now kept up, with the effect of almost entirely preventing the return of the tetanic convulsions; but on stopping its administration they quickly returned, as sensibility became restored. 25th. Seems in much the same state as yesterday; had little or no spasm since, the action of the chloroform having been constantly kept up, and requiring to be renewed at intervals of an hour or three-quarters of an hour. The moment he begins to recover consciousness he becomes eager to have the chloroform readministered, while, at the same time, the convulsions reappear. 26th. 10 o'clock A. M. Had a good night, but required more frequent administration of chloroform; considers himself better. 2 P. M. Appears weak, and, on stopping the inhalation, spasms almost immediately return. 8 P. M. Respiration much impeded by a quantity of mucus which has collected in the bronchial tubes, particularly in those of the right lung; from the commencement of the attack he has had considerable difficulty in coughing up the mucus from the lungs, for he appears to be unable to close the opening of the glottis so as to give a regular cough, and the only way he can effect the purpose is by a powerful expiratory effort. 27th. Had a very violent attack of spasm during the night, though the chloroform was steadily persevered in; by this attack he was nearly suffocated, and after it appeared greatly exhausted. 7 o'clock A. M. The convulsions returned with increased violence, the face became quite livid, and the respiration, already very difficult, was now almost completely arrested, and death ensued, apparently more from the impairment of this function than from the violence of the convulsions. He had been just three days kept constantly under the influence of chloroform, of which he used twenty-eight ounces; but of this, of course, a good deal was lost, as it was administered by pouring it on a handkerchief and holding this over the nose. It had the effect of greatly diminishing the violence of the spasms, though not of entirely arresting them; it also changed the patient's condition from one of the frightful agony usually experienced in tetanus to that of an almost constant slumber; and even if the mortality of the disease were in no way lessened, nor life prolonged a single hour, by the use of the agent, it must be admitted that its relieving the patient from so much suffering is in itself an immense boon; but, moreover, it can scarcely be denied, that the very fact of allaying severe pain,

and arresting those violent convulsions, must tend materially to prolong life by husbanding the patient's strength, and this additional length of life would give us the greater hope that the disease might finally exhaust itself, and complete recovery ensue. In the present case, too, swallowing was comparatively easy (no doubt from the spasmodic condition of the muscles of deglutition being relieved by the same agent), as the patient was able to take about three pints of good beef-tea daily, and even some portions of meat, cut up very small, floating in the soup. It should be mentioned that this man got, on the 24th, ten grains of calomel, followed by senna mixture, which operated freely, and that, during the remainder of the case, a moderate degree of diarrhœa continued, showing also an advantage that chloroform has over opium, that it does not constipate the bowels. This case, however, shows that chloroform, however useful, on the one hand, in allaying the more violent symptoms of the disease, is not, on the other hand, unattended with danger of its own, as the long-continued inhalation of the vapour must be highly calculated to cause congestion of the bronchial membrane, and indeed, I have little doubt that in the case before us, death was mainly caused by the effusion which took place in the lungs, and that, had this been permitted to go on for a few hours longer, it would have terminated the patient's life altogether independently of the original disease[a].

Case II.—A second case of tetanus occurred in the hospital a short time after this, of which, however, I have not kept a record. It arose from a very slight wound on the dorsum of the foot, was also treated with chloroform, and ran an almost similar course to the last, though, as death occurred at an earlier period, the bronchial symptoms were not so marked.

Case III.—For the following notes I am indebted to my friend, Mr. O'Keeffe, one of the students of the hospital, and now Librarian to the Queen's College, who acted as dresser, and paid very close attention to the case.

"Mrs. Deasy, aged about 40, the wife of a farmer near Frankfield, was admitted into the North Infirmary, July 1, 1855, under my father's care. On the day previously she had fallen off a ditch, some three feet high, by which she sustained a compound fracture

[a] These remarks on the use of chloroform were made at a time when the continued inhalation of its vapour was much less practised than it has since been. Subsequent experience has shown that, in cases of labour, it may be administered for days together without any ill effect; still, the two cases are not perfectly analogous, as in labour a complete state of insensibility is not necessary to be kept up for a long time together, while in tetanus, as we have seen in the foregoing case, the moment the patient recovers sufficient consciousness to cough up the mucus from the lungs, the convulsions return, and equally interfere with the same function. Thus a quantity of fluid which would, under other circumstances, be got rid of by expectoration, gradually accumulates, and, being saturated with chloroform vapour, must tend to increase the irritation; and we might fairly expect that an increased secretion would occur as an effort of nature to wash away the offending matter.

of the leg; the extremity of the upper fragment of the tibia protruded considerably, and the overlapping of the bones was very great. Every effort was made at reduction, the woman being under the influence of chloroform, but it was found impossible to place the broken ends *in situ;* the tendons of the tibialis posticus and other muscles had slipped from their groove behind the internal malleolus, and appeared to increase the tendency to displacement of the bones; it was accordingly deemed necessary to remove a portion of the upper fragment, after which reduction was easily effected; warm dressing was applied to the wound, and the limb, surrounded with a many-tailed bandage, was placed in a fracture apparatus, provided with a foot-board. Pulse after the operation 90°, but feeble.

"3rd. Patient restless from pain and want of sleep; pulse 84; leg somewhat swollen and œdematous; dressing not removed.

"4th. On removing the dressing, a small quantity of a yellow fluid, of the consistence of serum, escaped, which was probably synovia; leg much swollen; same dressing applied, and covered with a poultice.

"5th. Dressing to be removed twice daily; the margins of the wound beginning to take on a healthy action; centre of wound covered with sloughs; patient gets no sleep, and is a good deal annoyed by spasmodic twitching in the affected limb, principally in the toes.

"6th. A considerable slough came away to-day with the dressing; patient slept well last night, the first time since the leg was put up; seems to be going on very favourably; limb rather tense and swollen; wound discharging healthy pus.

"7th. Complains of stiffness of the neck, and difficulty of swallowing; in other respects doing very well; wound beginning to granulate; exposed portion of bone white and deprived of periosteum; patient slept well last night; dressing as usual.

"8th. Complains of not being able to open her mouth fully; a considerable quantity of unhealthy matter from the wound; up to this period there was no marked symptom of trismus, not the least appearance of the tetanic expression of countenance, and the slight stiffness complained of appeared to be more attributable to rheumatism.

"9th. Trismus is now more decided; she cannot separate the jaws more than three-eighths of an inch; when she endeavours to separate them more, the lower is drawn backwards instead of downwards, still there is merely tonic contraction; no appearance of spasm; nothing remarkable about the wound; leg much swollen and tense; pulse 90, feeble; wine, 3oz. daily.

"10th. Trismus continues; the cramps complained of in the toes of the injured limb have continued, and they have now extended up the limb to the hamstrings; there are also slight spasms of the sterno-mastoid muscles at intervals; but the contraction of those muscles and of those of the limb are materially different; the latter being very irregular in their occurrence, principally caused by dis-

turbance of the limb, particularly the dressing, but, though causing great suffering while they last, the muscles are completely relaxed in the interval, while the former are never relaxed, and the paroxysm of contraction comes on at somewhat regular intervals; pulse quick; to get as much wine and beef-tea as she can take.

"12th. Tetanic symptoms more aggravated; the cramps about the neck are much increased, and are aggravated under any excitement, and they became so severe during the dressing of the wound, and the spasms in the limb so distressing, that it was deemed advisable to place her under chloroform; this, however, had not the desired effect, as the first stage of chloroform anæsthesia (that of excitement) appeared to predominate greatly. Indeed, she seemed altogether insusceptible of the stages of relaxation or of collapse, for, though it was very freely administered, it only caused powerful contractions of all the voluntary muscles; the sound limb was drawn upwards and rigidly flexed; the arms were extended, and the hands convulsively grasped at those who stood near; the muscles of the abdomen and thorax became particularly tense and firm; the sterno-mastoid stood boldly forward, and the patient was drawn into a position between sitting and lying: this was the first time the convulsions had become general, but as the effects of the chloroform passed off she returned to about the same condition she had been in before its operation, but during the remainder of the day the spasms of the limbs were most distressing, so that the woman longed for death. 9 o'clock P.M. No better; to have a drachm of tincture of opium, and this to be followed by twenty minims every two hours until she sleeps.

"13th. Fell asleep at 1 o'clock, but on awaking was seized with a fit similar to that of yesterday morning; patient is now decidedly worse; convulsions more violent; the jaws more firmly closed; she is scarcely able to swallow, and any attempt to do so brings on violent convulsions of all the muscles about the head and neck, particularly of those of deglutition. She was directed to take a drachm of tincture of opium every four hours until sleep would come on, the effect being watched.

"14th. Patient's condition truly appalling; she is unable to swallow anything; refuses to attempt even the laudanum; her only food for the last two days has been two eggs beaten up, with a little wine. She is very weak, and sinking fast.

"15th. Died at 9 o'clock, A.M.; convulsions continued unabated to the last; her intellect was never affected."

April 22nd, 1857.

Dr. Corbett, Vice-President, in the Chair.

Compound Presentation of Face and Arm.—Dr. Harvey gave the following particulars of the above case:—"I lately attended a lady in her third confinement, with twins; the first child, a boy, presented naturally, and was born after a good labour of three hours. In the

second case (a girl), the face presented in what is usually termed the second position, with the left cheek towards the os pubis. Having ascertained how matters stood, and knowing the pelvis to be roomy, I determined to leave the case to nature. On a subsequent examination, however, finding the shoulder very near, and the humerus almost immediately coming within reach, and these advancing, while the head made but little way, I requested a consultation, so as to be prepared for early turning in the possible event of the case being converted into an arm presentation. During a few successive pains I endeavoured to keep the shoulder back, and the head again advanced, and before the arrival of my friend Dr. Finn, the case had declared itself a face presentation, complicated with descent of left arm. The hand was now at the os externum, and the head and arm became arrested in their passage through the pelvis; and as the patient was feeble, and the uterine contractions had slackened, it was deemed prudent to apply the forceps, passing the pubic blade between the arm and head. This was done without difficulty, and the delivery completed. The head of the child was deeply indented by the pressure of the protruded extremity, and to this its death appeared attributable. Considerable relaxation of the uterus and post-partum hemorrhage ensued."

May 13th, 1857.

Dr. Finn, President, in the Chair.

Case of Recovery from Ruptured Uterus.—Dr. Harvey prefaced this case with the following observations:—

"Since the highly important communication of Dr. Stokes on the free exhibition of opium in inflamed peritoneum from the escape of fluid into its cavity[a], the practice seems to have been recognised and adopted as the means best calculated to afford a chance of recovery in many cases which would be otherwise considered hopeless; and it has been extended in the hands of others even to cases of simple peritonitis, in which the usual means seemed inadmissible. Amongst other casualties in which the same treatment was suggested by the eminent author of the paper above alluded to, rupture of the uterus was enumerated. I am not aware of any case having since been recorded in which that suggestion has been fully acted upon[b]. The following particulars of a case in which it was put in practice I give more in detail than might otherwise appear necessary, both because it appears to me to contain several points of interest, and because I am desirous that the relations of the symptoms to the means adopted may be fully seen throughout.

"Even though the present case should not be looked upon as a *recovery*, it still affords as much encouragement for further trial of

[a] Dublin Journal of Medical Science, First Series, vol. i. p. 125.

[b] A case related by Dr. Murphy at the Obstetrical Society of Dublin, in February, 1839, can scarcely be considered an exception to this remark.

the plan as the case which was the occasion of its introduction by Dr. Stokes. Both would probably have terminated favourably in the end but for circumstances in which the peculiar treatment had no part.

"The tendency constantly shown in disease, to proceed to a certain termination, in many cases almost irrespective of treatment, and the fact of recoveries constantly taking place under circumstances the most opposite, are sufficient to induce great caution in attributing special results to any individual remedy, or line of treatment, unless there be something more than the simple appearance of cause and effect from which to draw our conclusions. But there are certain conditions connected with the operation of remedies, which may, perhaps, be considered as in some degree establishing their absolute service in particular cases. Among the chief of these is a tolerance of the remedy which does not exist under other states of the system,—the absence of its known injurious effects, and the non-disturbance of the functions generally under its use. This tolerance seems to argue the existence of a pathological condition upon which it depends, and which is the foundation of the applicability of the remedy; and upon this, it would appear, also depends the *therapeutic*, as contradistinguished from the *physiological* action of medicines. Thus, blood-letting practised on a person in health produces injurious effects, even where carried to a small extent; whilst benefit follows a much larger detraction when the morbid condition requiring it is present, and *un*accompanied by its usual deleterious effects. A glass or two of wine, which, if taken by a female under ordinary circumstances, would cause heat and fulness, and considerable disturbance of pulse, will, in a paroxysm of neuralgia, produce no sensible effects beyond a relief to present suffering, and a general equalization of the circulation. The tolerance and good effects of the means used in these cases are found mutually to confirm or correct each other, and occasionally also serve, in some degree, to assist in determining a doubtful diagnosis. If the pathological condition indicating the use of the remedy be not present, deleterious results are visible: if, on the contrary, it do exist, then the physiological effects will remain latent until that condition is neutralized. Principles somewhat similar might, perhaps, be laid down with regard to tonics and stimulants in the neuralgic and other conditions of the system.

"That which seems to call for, or admit of, the exhibition of opium in high doses, is a state of *collapse*, resulting from a severe *shock* to the system, or *exhaustion with irritability*, or *both;* though it may not be very easy to determine the abstract causes essentially constituting the conditions demanding the particular line of treatment in the different states alluded to. More than that inflammation is to be met by blood-letting; and something different from simple debility is involved in both the conditions, which may severally require a tonic and stimulant, or an opiate treatment.

"Mary Murphy, aged 38, a spare but healthy-looking woman,

was admitted into the Lying-in Hospital, stated to have been in rather strong labour of her third child for the last thirty-six hours; former labours reported to have been natural, and of about nine hours' duration. When seen at 2 o'clock P. M., the pains were strong and frequent, and she felt debilitated. Pulse about 100, weak; bowels confined; no difficulty in passing urine; the head was found occupying the upper part of the cavity of the pelvis; presenting part œdematous, and making slow advance; liquor amnii had been dribbling away since the day before. She was ordered a turpentine enema and some broth. On being suddenly summoned, about $7\frac{1}{2}$ o'clock in the evening, we found the woman in a state of great prostration; the pains had ceased, and the pulse was exceedingly rapid and weak; the head of the child had receded out of reach of the fingers, a large globular tumour was felt in the epigastrium, and there was already some abdominal tenderness. She was not conscious of any sudden change of movement having taken place. It appeared that she had a severe fall, with a basket of bread on her back, some weeks before.

"On consultation with Drs. Finn and Tanner it was determined to attempt delivery by turning. This was easily accomplished, all being loose in the cavity of the uterus, the fœtus still remaining partially within it, its head lying in a lax pouch over the os pubis. There being some difficulty in extracting the head, it was perforated behind the ear, and delivery thus accomplished. The placenta followed readily, and there was little hemorrhage throughout. It was considered advisable that I should reintroduce my hand, with a view to free any intestine that might have got engaged in the wound, when I discovered a large oblique rent in the right side of the fundus, situated anteriorly, at least three inches in extent; my fingers passed freely into the peritoneal cavity.

"The patient was very much exhausted after the operation. The pulse was then 124, small and weak; surface perspiring, but not cold. There was none of the brown vomiting frequently observed in such cases. A moderately tight bandage was applied, and she was ordered to take two grains of opium immediately, and one grain every hour afterwards; to have arrow-root and weak tea.

"We desired that we should be sent for if she were alive at 7 o'clock in the morning.

"Second day, 8 o'clock A. M. A quiet night, but had little sleep; countenance not much sunken; abdominal tenderness rather increased; pulse 100, soft; tongue moist; has passed water. Powders regularly taken up to 6 o'clock.

"2 o'clock P. M. Has been dozing a good deal; tympanitis and rather more tenderness; pulse 104, soft, but rather fuller; respirations 18; refers all her uneasiness to the epigastrium. Twenty leeches to the abdomen, to be followed by fomentations, and afterwards a large poultice. Powders continued.

"$8\frac{3}{4}$ o'clock P. M. Has continued to slumber occasionally, but is easily aroused, and perfectly collected; considerable relief from

the leeching; tympanitic distention rather increased; countenance better. Has taken a good deal of arrow-root. No vomiting; urine freely passed. No powders have been taken since 3 o'clock, owing to a mistake. She is to take one grain of opium every second hour, and half a drachm of mercurial ointment is to be rubbed into the arms every eighth hour.

"Third day, 8 o'clock A. M. Slept a good deal; some vomiting of grass-green fluid this morning; lochia natural; pulse 108, soft. The powders to be continued every fourth hour; cataplasms and mercurial ointment to be continued.

"9 o'clock P. M. Occasional vomiting still; tympanitis and tenderness rather diminished; lies on both sides sometimes; urine free.

"Fourth day, 11 o'clock A. M. Some sleep, but countenance a good deal sunk this morning, with dampness and diminished warmth of skin; pulse 120, weaker; was allowed to indulge too freely in drinks, and has vomited considerably more in consequence. A blister to be applied to the abdomen, and if the vomiting continue in the evening, an injection of broth, with half a drachm of tincture of opium, to be administered; to take a dessert-spoonful of chicken-broth every half-hour.

"9 o'clock P. M. Vomiting has ceased, tenderness and tympanitis perceptibly diminished; countenance improved; pulse 116, stronger; lochia have disappeared; dislikes her powders. To have the following pills:—Opium, twelve grains; extract of hemlock, a scruple, to be divided into twelve pills; one to be taken every third hour; the cataplasms and mercurial ointment to be continued; and to have an increased quantity of broth.

"Fifth day, 11 o'clock A. M. Night restless, and yet her countenance is improved; no appearance of mercurial action; blistered surface dressed with a drachm of mercurial ointment; frictions discontinued; pills to be continued.

"9 o'clock P. M. Puffing and tenderness less than at any time during her illness; complains slightly of her mouth; continue treatment.

"Sixth day. Three full, free, feculent evacuations; pulse 100, rather weak; tympanitis nearly gone; broth given more freely; biscuit with milk; the pills continued.

"Seventh day. Bowels free; tongue clean; little tenderness, except in the neighbourhood of the rent; pills to be omitted, and the following draught to be taken at night:—Battley's sedative liquor of opium, twenty minims; camphor mixture, eleven drachms; syrup of orange, a drachm: mix.

"Eighth day. Slept well; no pain; tenderness nearly gone. Is tired of broth, tea, and biscuit; an egg beaten up with a dessert-spoonful of wine, as often as four times in the twenty-four hours.

"Twelfth day. Has continued to improve, with slight variations, during the last four days; debility now appears to be the only source of complaint. Has continued her draughts of Battley's solution, and her wine. The following pill to be taken every fourth

hour:—Sulphate of quina, two grains; extract of gentian, two grains and a half: mix.

"Evening. Pressing hard to be allowed home, and feigning inability to speak except when she wants to urge her point; bowels rather freer. Pills to be continued, and an opiate enema to be administered at night.

"Thirteenth day. Has obstinately refused her wine and pills since 6 o'clock last evening, and would not submit to the enema, notwithstanding which she has had a pretty good night; tongue natural; pulse 96, of fair strength. Discontented and difficult to manage all through her illness, she now resolutely refuses all nourishment and medicine, though told her recovery will as certainly follow compliance, as death must the contrary.

"9 o'clock P. M. In the afternoon, about $3\frac{1}{2}$ o'clock, was induced by the priest to take some broth and a pill; she is, notwithstanding, evidently sinking to-night; the extremities are cold, and the pulse can scarcely be felt; she is perfectly collected, and keeps to her resolution.

"Fourteenth day. Died about 4 o'clock this morning.

"*Examination*, sixteen hours after death.—A very hurried and unsatisfactory examination was, with great difficulty, obtained by candle-light, in the presence of her father and mother. There was no distention of the abdomen; intestines in the neighbourhood of uterus were extensively agglutinated to it, to each other, and to the abdominal parietes, by lymph in process of organization; a few small sacculi, formed by lymph inclosing spots of half an inch to an inch in diameter, where the intestines did not touch the parietes, contained purulent matter, but the quantity, in all, was by no means great; uterus about two inches and a half or three inches in diameter, adhering, on all sides, more or less to the neighbouring viscera; the rent, occupying right side of fundus, appeared to have closed throughout the whole of its length within, and through about two-thirds of the substance of the uterus from within outwards; externally it had the appearance of a granulating, incised wound, which had not been evenly closed in the first instance, pouting a little towards the peritoneal surface; its length now appeared about an inch, or perhaps a little more, say two-fifths, of the diameter of the uterus.

"It was, of course, impossible to procure the specimen for preservation.

"The circumstance most worthy of attention in the foregoing case is the fact, that though leeching, mercurials by the skin, and fomentations, were availed of as *auxiliaries*, the main treatment was the full exhibition of opium, so as to keep the patient continually under its influence. The quantity taken was large,—fifteen grains in the first twenty-four hours, and fifty grains in all during the first week of her illness, besides a considerable quantity afterwards, in various forms,—and yet, during the whole period, none of the poisonous effects of the remedy were observed; no narcotism, no deli-

rium; in fact, there was entire absence of cerebral disturbance, or of any of the unpleasant consequences which so frequently follow from a grain or two taken under other states of the system. The bowels, after a slight interruption, acted fully and freely, and the urinary and cutaneous secretions were natural throughout. But for the dogged obstinacy of the woman herself, there seems little doubt but that she would have added one to the still small list of recoveries from ruptured uterus; the case was still sufficiently successful, however, to show the value of opium in such cases; its sustaining and quieting effects gave nature the opportunity to make the effort at reparation which could scarcely have been effected otherwise.

"Persons not unfrequently sink without a rally under the shock consequent upon great and extensive injuries. Might not opium, given on the principles advocated above, afford such patients a chance of reaction, and ultimately of restoration?"

On Acute Atrophy of the Lungs. By PROFESSOR BUHL, of Munich.

I VERY recently had occasion to examine the bodies of three individuals dead of typhus fever, the condition of the lungs in whom appears to me to be of special interest. It, in fact, confirms in a certain respect, and enlarges the opinion I previously expressed[a], which was based on only a few observations, that a morbid process analogous to acute Bright's degeneration of the kidneys occurs in the lungs; that this, as an inflammatory process, must be distinguished from croupy and tubercular pneumonia; and that this desquamative pneumonia, as I proposed to call it, during acute exanthematous disease, typhus, &c., occurs in the period of specific morbification. In this paper I pointed out that solution and fatty metamorphosis, with more or less condensation and colouring of the pulmonary tissue, might be regarded as perfect or imperfect reparative processes of the acute inflammatory condition of the lung.

The three dissections above alluded to afforded examples of a third and unfavourable termination.

In all three cases death occurred between the fourth and the sixth week from the commencement of the disease, and therefore in the period of the secondary processes after the disappearance of the proper typhus; dissection in each case revealed considerable hypertrophy of the brain, and in addition, in two instances, swelling of the spleen and of the mesenteric glands in a state of retrogression, the ileum with flat edged, more or less united, ulcers extending to the muscular coat; once, on the contrary, there was a relapsing, pale, medullary swelling of the edges of the ulcers already existing in the

[a] Report on 280 dissections. Henle and Pfeufer's Journal für rat. Med. Neue Folge. Bd. viii. Heft 1, page 80, &c.

clusters of Peyer's glands, with fresh exfoliation of the same, fresh tumefaction of the spleen and mesenteric gland; in this case there was also a larnygeal ulcer denuding the arytenoid cartilage.

The pulmonary pleura was never directly adherent to the costal; on the other hand, I twice found a circumscribed adhesion by means of fibrinous exudation; the parts of the pulmonary tissue subjacent to the latter exhibited at one time pulpy foci, of gangrenous odour, from the size of a pea to that of a hazel-nut,—once in the inferior lobe of the right lung, once in the upper lobe of the right, and in the lower lobe of the left lung; at another time the greater part of one lobe was gangrenous, as was in one example the superior lobe of the left lung; in the latter case several of the corresponding branches of the pulmonary artery presented secondary thrombi, not caused by emboli. Besides these destroyed portions, the tissue of the affected lobe of the lung presented complete absence of air, an unusual flaccidity, with considerable infiltration, a smooth surface of section, a generally brownish-red discoloration mixed with something of gray, which latter was in some lobular portions predominant; a lobular more or less dense consistence, and, what was in each case most striking and significant, a considerable cylindrical dilatation and reciprocal approximation of the finer bronchi unprovided with cartilages, with a dark livid redness of their mucous membrane.

Lobular condensations void of air, from the size of a pea to that of a cherry, were found in greater or less number also in the other lobes of the lungs, in the midst of aërated and merely œdematous tissue.

In the two cases of pleural fibrinous exudation, there lay in most of the finer, but, as has been remarked, dilated bronchi belonging to the gangrenous foci of the pulmonary parenchyma, croupy plugs, which once were continued into the larger branches as loose investing croupy membranes. The gangrenous foci lay chiefly along the plugged bronchi, and in parts embraced the entire tube.

Microscopic examination showed, when the tissue of the lungs was investigated step by step from the lobular, unaërated, condensed parts into the pulpy masses, that the chief alteration lay in the epithelium, as in it the simple dark filling with fine granules could be traced up to complete molecular destruction, whereby lastly the fine granules were either still accumulated in the form and arrangement of the earlier cells, and the little clusters continued grouped together, or with total obliteration of the contours of the cells only undefined molecular masses were to be seen. Fungi or infusoria were not observed in these masses. Of fibrinous plugs, pus in the pulmonary tissue, as well as of cellular formations, like those seen in the gelatinous infiltration around the yellow dry lobules in tuberculous pneumonia, no trace could be discovered. It is therefore evident that we had to do neither with tubercular nor with croupy pneumonia.

In estimating the foregoing observations, two points appear to be

pre-eminently of essential and characteristic importance:—1. The cylindrical dilatation and reciprocal approximation of the finer bronchi in the flaggy, unaërated, infiltrated pulmonary parenchyma; 2. The more or less complete molecular destruction of the epithelial investment of the air vesicles.

Both points present the most incontestable analogy to Rokitansky's fully formed acute atrophy of the liver. If in typhus, as I endeavoured to show in the Report above quoted, only the early stages of acute atrophy are usually found, the same is likewise the case with the lungs; while the slighter degrees of the pulmonary affection just described, that is, of desquamative pneumonia, are not so rare in typhus, its highest degree, the acute atrophy of the lungs, as I think I must call the affection in question, is of extreme rarity.

There can be no doubt we have really to deal with atrophy of the pulmonary parenchyma; the destruction of the pulmonary epithelium is unmistakable; the areolar tissue is filled with it and its molecular remains, as well as with some albuminous fluid; through expulsion of the air it is collapsed, atelektatic, and even if in no case an old pleural adhesion was present, still the force of the physiological adhesion of the costal and pulmonary pleura is so great, that under the above described decrease of volume of the pulmonary parenchyma and its simultaneous inaccessibility to air, it is able to overpower the walls of the bronchial ramifications, and to dilate their caliber. The cylindrical dilatation of the bronchi is explicable in no other mode.

The only possible difference between acute atrophy of the lung and acute atrophy of the liver consists in this, that in the former, in consequence of the action of the atmospheric air, the destroyed masses, with their fibrous superstructure, will be subject to complete softening and putrefactive decomposition, and therefore the pulpy, gangrenous foci will be chiefly situated around and along the bronchi, and the croupy affection of the bronchial mucous membrane and the pleuritis are to be regarded as further consequences of the same.

Acute atrophy of the lung, combined with pulpy destruction, may further represent a form of pulmonary gangrene, which, at least on the dissecting-table, must be distinguished from other forms of mortification of the lungs.

The coincidence of a relapsing tumour in the spleen, Peyer's and the mesenteric glands, with complete acute pulmonary atrophy, which latter represents a period of about four weeks, is also not without interest.

As I have already done in my Report above quoted, I forbear for the present to identify the desquamative pneumonia and its higher degrees, acute pulmonary atrophy and its consequent gangrene, with morbid conditions of texture, possessing, according to the description of other observers, analogy with them, and to which the synonym should be given only after fresh investigation. But I consi-

der a revision and more accurate examination of the several inflammatory processes in the lung to be a not unimportant desideratum in pathological anatomy.—*Virchow's Archiv*, 1857. Band xi. Heft 3, p. 275.

On a Peculiar Cavernous Degeneration of the Muscular Substance of the Heart. By Dr. C. Skrzeczka.

In August of last year Dr. Reichel, in performing a medico-legal post-mortem examination, found the heart, which shall presently be more particularly described. He sent it, on account of an adhesion of the two laminæ of the pericardium, to Professor Rathke, from whom, through the kindness of Professor v. Wittich, I obtained it for more exact investigation. Of the history of the case Dr. Reichel communicated the following.—

A strongly built peasant lad, aged 21, stated to have been previously in good health, was chased by a shepherd's boy twelve years old, caught, and thrown on the ground. At the same moment he gave a few rattles in his throat, and died. On post-mortem examination, the face was bloated, the abdomen swollen, the entire body livid, and covered with a network of blue transparent cutaneous veins. Putrefaction was already perceptibly advanced. Externally there was no trace of injury or malformation, except some cicatrices on the joints of the foot and on the right clavicle, apparently the result of former scrofulous ulcers. In the head there was a great accumulation of dark fluid blood in the veins and sinuses; at the base of the skull and in the canal of the spinal column were collections of bloody serum. There was total, firm, and membranous adhesion of the left lung to the costal pleura. The right lung presented some filamentary attachments to the pleura costalis. In the right pleural cavity were fully six ounces of black, thin, fluid blood. Both lungs, especially the left, were overloaded with dark red blood. The pericardium was firmly adherent to the left pulmonary pleura.

It was fully proved, in answer to subsequent repeated inquiries, that the deceased had never suffered from thoracic inflammation. The heart was preserved in spirit until the middle of November for further examination.

The heart, with the origins of the large vessels, weighed 326 grammes [about 11½ ounces avoirdupois], and was of medium size. The parietal layer of the pericardium was completely adherent to the visceral; between them were calcareous depositions in the form of hard plates of various sizes. On opening the left ventricle at the left edge of the heart, the section of its wall presented a very peculiar appearance. It perfectly resembled the section of a fine bathing sponge, and corresponded nearly to the representations Brücke has given of the cavernous hearts of amphibious animals. Close together lay little cavities from the size of a pin's head to that of a small bean, separated from one another by the yellowish-brown muscular

substance. The larger cavities lay externally, the largest almost immediately under the pericardium. Many of the latter were imperfectly divided into several cells by fine membranes and filaments passing from one wall to the other. The cavities were filled with spirit, and, when this ran out on section, were perfectly empty. Only one of the cavities lying close under the pericardium contained some coagulated blood, the dark colour of which was visible through the pericardium. No proper membrane lining these little cavities could anywhere be demonstrated; they represented only gaps in the muscular substance. In the neighbourhood of the sulcus circularis was, in the muscular substance, a yellow spot about the size of a pea, about half a line under the pericardium, bounded and distinguished from the surrounding parts by tolerably sharp outlines. Further sections through the muscular substance showed that the entire of the left ventricle was degenerated in the same manner, as was the septum ventriculorum. The wall of the right ventricle was affected by the same process, though in a much less degree, nor were the papillary muscles of the left ventricle entirely free.

The valves were all normal, the left ventricle was somewhat hypertrophied, in other respects the dimensions of the heart were, so far as could be estimated from a preparation kept in spirit, nearly normal. The arteries contained no trace of atheromatous deposits. The coronary arteries of the heart were normal.

After a fresh section the spirit contained in one of the larger cavities was now microscopically examined, but, with the exception of fat globules, nothing was seen calculated to throw light on the probable contents of the cavity. The membranes and filaments stretched within the larger cavities consisted of wavy connective tissue, mixed with fat globules. The coagulum of blood in the one cavity above mentioned exhibited nothing particular under the microscope: coagula of fibrin infiltrated with colouring matter of the blood. The muscular structure was everywhere, especially in the left ventricle, extensively converted into fat; in consistence, too, it was extremely brittle; it was impossible strictly to separate it into fibres, small fragments of muscular bundles for the most part appearing under the microscope. The above described yellow spot contained no trace of muscular fibres, but was formed simply of connective tissue with interposed fat, the latter being present partly in a free state in little drops, and partly enclosed in large cells. In some of the latter were found fine tufts of acicular crystals.

To decide the question as to the mode of origin of these cavities, it would be important to know what had been their contents, yet it was impossible to arrive at any certain conclusion on the subject. It is not easy to imagine that the walls of the cavities could have been in contact without inner space or contents; consequently, they must have contained either a fluid which subsequently became mixed with the spirit, or, perhaps, a solid body soluble in alcohol.

Neither did I succeed in finding on record similar cases capable

of throwing light on that I have described. What Rokitansky says of cysts in the heart is not exactly in point, and equally inapplicable is Foerster's short notice of the subject. The great number of cavities makes it inadmissible to refer their origin to apoplexy (see Cruvelhier's Atlas), with subsequent reabsorption of the effused blood. One of the cavities, indeed, contained blood, but this was probably poured out into the cavity already existing.

Still less likely is it that a number of small abscesses should have formed, the pus of which was afterwards absorbed. Traces of pus should still have been found, and, besides, the man would certainly have died before so complete a reabsorption could have taken place. It appears to me that but one mode of explanation is admissible: either in consequence of pericarditis (perhaps also of partial myocarditis), which led to obliteration of the pericardium, or of some other unknown causes, fatty degeneration of the muscular structure of the heart occurred in the third form described by Rokitansky. Throughout this fatty degeneration small scattered spots of the muscular structure were completely destroyed, and the fatty detritus was either absorbed during life, giving rise to the formation of the cavities which now became filled with matter of some kind, or the fat was afterward extracted by the spirit, so that the cavities were not formed until after death. The latter explanation appears to me improbable, because, in the first place, we found a cavity filled with blood, showing that such had existed during life; and because, in the second place, fat cannot be extracted by alcohol, especially when so weak as that which is used in preparations. The yellow soft spot and the muscular structure of the heart, which we might regard as an early stage of the supposed process, is also in favour of the explanation I have given.

In weak states of the heart, such as was undoubtedly present in this instance, death frequently ensues suddenly, mostly through paralysis of that organ. In the case before us the result of the post-mortem examination clearly points to the lungs as the immediate source of death, and the question will suggest itself, in what mode the above described condition of the heart could have caused sudden death by the lungs.

An extremely weak condition of the heart will, through the imperfect emptying of the left ventricle, act in a manner similar to constriction of the aortic orifice, as a mechanical obstacle to the efflux of blood from the left auricle and the pulmonary veins, and so become a cause of the accumulation of venous blood in the lungs. In addition, the inefficient contraction of the right ventricle affords a slighter pressure of blood, which is scarcely capable of being propagated through the capillary system, so that the *vis a tergo*, contributing to the emptying of the pulmonary veins, which is never very considerable, must in this case be entirely absent. If we now further consider that in general weakness of the heart, the sucking power of the diastole will have almost disappeared, it follows that the emptying of the pulmonary veins was effected in the above case,

almost exclusively through the inspiratory movements, and that the derangement and partial obstruction thereof caused by the rapidity and exertion of the race, the subsequent fall, and the pressure on the chest, may have induced sudden death by the lungs.—Virchow's *Archiv*, Bd. xi. Heft 2, 1857, p. 181.

Case of Acute Phosphorus-Poisoning, observed in the Second Division of the Imperial and Royal Garrison Hospital. By Dr. TH. NITSCHE.

NOTWITHSTANDING the many deficiencies in the observation of the case I am about to describe, and particularly in that part relating to the chemical investigations, which, on account of the multiplicity of business, can never be carried out in a large hospital with the detail and precision attainable in a clinique or in the laboratory,—I feel myself particularly induced to publish it, because in the first place both the phenomena during life and those observed in the dead body were accurately noted; and secondly, because it has occasionally happened during the last few years that portions of the bodies and of the contents of the stomach and bowels of individuals who had died in consequence of poisoning by phosphorus have been sent here for chemical examination by courts of inquest, without any accurate account of the phenomena observed at the sick-bed and at the autopsy being at the same time given; and lastly, because even in the present day and in the special manuals upon the subject of poisoning, such erroneous views are entertained as to the effects of phosphorus, that the communication of a well-established case of poisoning by that agent cannot be entirely devoid of interest.

Ant. H., a private soldier of the 42nd regiment of infantry of the line, and servant of one of the principal generals, was brought in the afternoon of the 21st of May in last year, without any particular information as to his case, from the transport-house to the second division of the principal garrison hospital of this place, where at the visit he complained only of depression, nausea, and headach. As a closer examination of the patient and of his objective symptoms showed nothing further than a rather increased frequency of the pulse, a furred tongue, a somewhat elevated temperature of the head, and brighter appearance of the cornea, while auscultation and percussion revealed merely a slight extension of dulness in the region of the liver, something indifferent was prescribed, until at the end of the visit I learned from the physician of the transport-house, who had arrived in the meantime, that the man had on the preceding evening swallowed tops of phosphorus matches, which were found in great quantity in what he had thrown up in the transport-house. On being now more closely questioned, the man confessed that on account of an affair with the housemaid which had brought on him the disapproval of his master, he was about to return to the ordinary troop service with his regiment not in garrison at Vienna, and had consequently determined from grief to put an end to his life; this he

attempted to do on the 19th of May first with quicksilver, by swallowing the entire quantity he got out of a barometer. But as this passed quickly through the intestinal tract, he had recourse to another means of attaining his object, namely, phosphorus. According to his statement he swallowed on the evening of the 20th the heads of six packets of ordinary matches, and was in about three hours after attacked with violent vomiting, which had returned so frequently that he could not state how often he had thrown up. He also corroborated the statement already made, that the vomited matters contained a large quantity of match-tops.

It only remains to mention that he was a very strongly built man, aged twenty-one, who had always enjoyed good health, and that the headach was the symptom of which he complained most. He was now ordered, with a view of removing any of the phosphorus matches which might remain in the stomach, an emetic of tartarized antimony and ipecacuanha; cold applications to the head, and magnesia milk, the latter to be taken in as large quantity as possible so soon as the effect of the emetic commenced, were also prescribed. The result was that he vomited about three and a half quarts of a greenish turbid fluid, the sediment of which consisted of mucous flakes, the remains of undigested food, and a few of the match-tops. The fluid itself, however, yielded no odour of phosphorus.

On the morning of the following day, that is on the 22nd, the symptoms had but little changed, the headach was less, the pulse 92, the face was rather flushed, the abdominal parietes were distended, the abdomen was otherwise empty, there was only slight tenderness on pressure in the epigastric region; still the patient complained of commencing pains in both hypochondria. The magnesia milk was continued.

In the afternoon the congestion of the face had increased, as had also the pains in the hypochondria, of which, as well as of burning thirst and dryness in the mouth and palate, the patient chiefly complained. The headach had entirely disappeared. The urine was intensely red and rather frothy; the chief result of its examination, in addition to a slight increase of the specific gravity, was the discovery of the presence of albumen and of exudation cylinders; the colouring matters of the urine were moreover increased, as were the sulphates and phosphates; the chlorides on the contrary were diminished; yet as these estimations were made only by the eye, as is usually done at the bedside, they have but a doubtful value. This state of the urine continued during the whole course of the illness.

On the morning of the 23rd, that is, on the third day after the poison was taken, the thirst and dryness of the mouth, but especially the pains in hypochondria, had increased, to which were added stinging pains in the chest. The congestion of the face was also greater, the tenderness in the epigastrium was more considerable, and the tympanitic sound in the same region was extended over a larger surface. Bearing in mind the general opinion as to the effect of phosphorus upon the stomach, and inferring from the symptoms which

have just been described that gastritis was setting in, leeches and poultices of ice were ordered, together with the internal use of ice, the latter partly with a view of allaying the tormenting thirst. The magnesia milk was also continued.

In the afternoon of the same day the phenomena had not changed, except that the congestion of the face had assumed a peculiar bluish-red colour, from which, however, the middle of the face was perfectly free through a breadth of about an inch, which, as the bluish-red colour of the entire of the rest of the face was abruptly bounded by this colourless band, drawn as it were from the highest point of the forehead to the chin, gave to the physiognomy a peculiar appearance I have never before observed. On this afternoon an enema was prescribed, as the patient had not been at stool since he swallowed the matches; this produced a copious, pultaceous, yellowish-brown motion, free from any odour of phosphorus. The chemical examination of the evacuation was prevented through the negligence of the attendant.

On the morning of the 24th, that is, on the fourth day after the poisoning, the pains in the hypochondria had somewhat remitted; those in the chest, on the contrary, had increased to an intolerable degree, without, however, the physical examination of the thoracic organs indicating any material change, except that the respiratory murmur was more sharply vesicular. The bluish-red colour of the face had changed into a perfectly cyanotic hue; the middle line, however, remaining free from colour, as above described. The pain in the epigastric region had entirely ceased. The patient perspired very profusely, and his perspiration had such an intensely peculiar phosphoric odour, that one got quite a puff, as the saying is, when the clothes were raised; his breath, on the contrary, was quite free from smell. A peculiar phenomenon was the loss of the power of vision, which was now setting in. Thus the patient, who was otherwise perfectly conscious, stated, that in the horizontal position he had only a faint perception of light, but that when he rose he did not see at all; at the same time he complained of shooting pains in the eyeball. The pupil was so much dilated that of the iris only a slender ring was visible, which did not in the least react on the light. The pulse was 100, but was tolerably full and strong.

In the afternoon the pulse had risen to 140, and had become small and weak; the sense of hearing was blunted; the perspiration continued excessive, and its odour was more intense than in the morning; the extremities were cool; the second sound was no longer to be heard in the heart or great vessels; the patient retained perfect consciousness, and complained only of extremely violent pain in the chest. He died quite quietly at 7 o'clock in the evening.

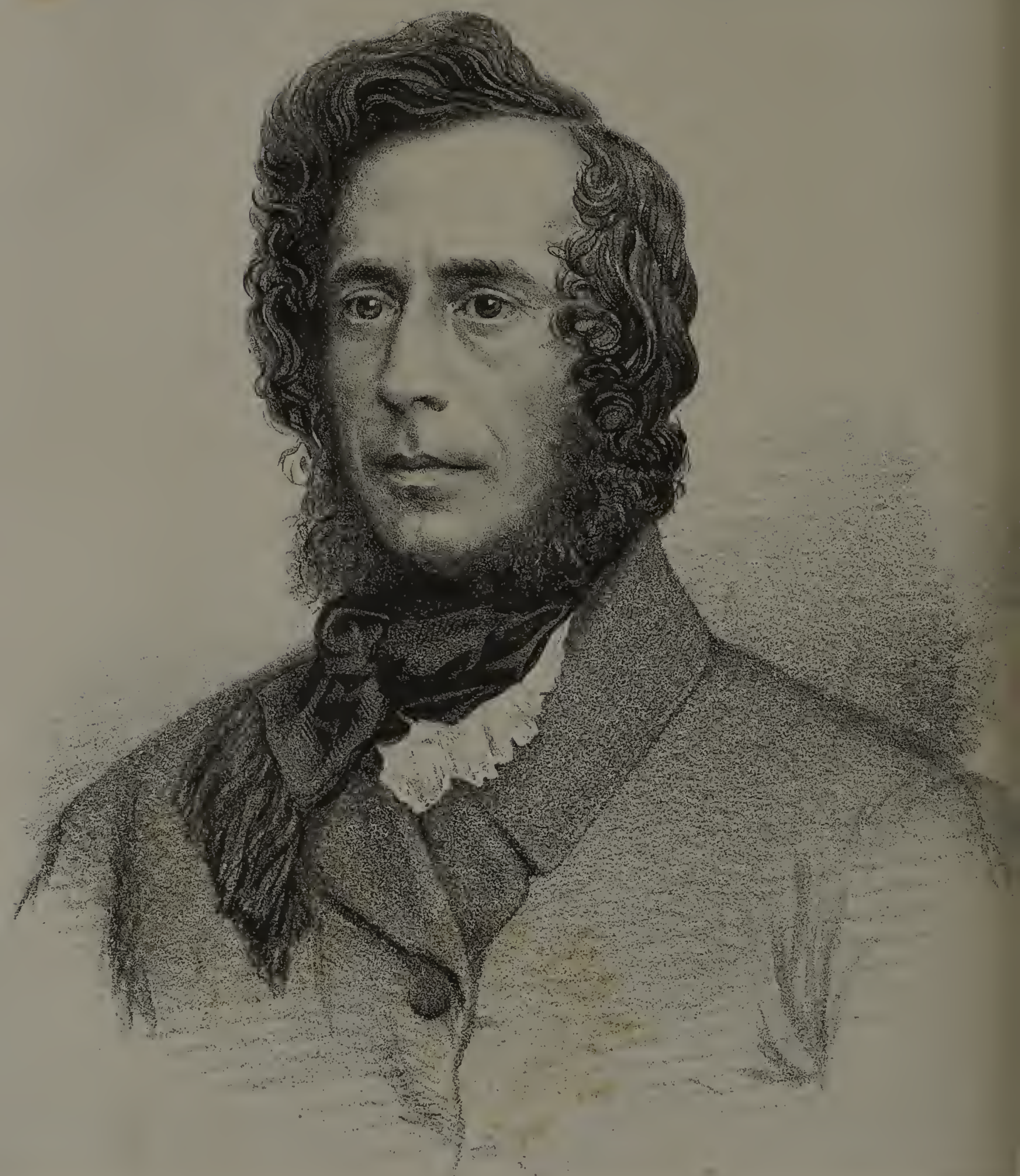
The post-mortem examination, which took place on the morning of the 26th, afforded the following results :—The brain was pale, ex-sanguine, and somewhat softer than usual; in the ventricles was a very small quantity of serum; the sinuses were distended with dark semifluid blood; in the mediastinal and in the subpleural

areolar tissue were extensive ecchymoses, as was the case also in most of the layers of areolar tissue. The lungs were of a dark red colour, containing in the lower lobes on both sides much bloody serum; on the upper surface were numerous ecchymoses, and in the right lung were several patches of sanguineous congestion; in the pericardium was a little reddish-coloured serum; the heart was flaccid; the left ventricle was empty; the right as well as the large venous trunks contained much dark blood, partly in the state of a loose coagulum, and partly fluid; the liver was somewhat enlarged, fatty and completely exsanguine; in the stomach there was some greenish fluid mixed with white flakes; the mucous membrane was slightly turgid, much viscid mucus was adherent to it, only at the base of the stomach was it rather hyperemic, elsewhere it was quite normal; the mucous membrane of the œsophagus and pharynx was in a perfectly normal condition; in the duodenum it was circumstanced as in the stomach; along the course of the intestinal canal there were in several parts tolerably extensive ecchymoses in the subperitoneal areolar tissue; there was nothing abnormal in the small and large intestines; both contained a considerable quantity of yellow fæcal matter; the spleen was void of blood; the cortical substance of the kidneys was slightly granular; the Malphigian bodies were very beautifully seen, even with the naked eye, as red points. Microscopic examination showed injection of the Malphigian tufts and exudation plugs in the tubuli uriniferi. In the submucous areolar tissue of the calices and pelves of the kidneys were scattered ecchymoses; the urinary bladder was contracted, and contained a little turbid urine. The stomach and a considerable portion of the intestinal canal, with their contents, were examined in the chemical laboratory of the Imperial and Royal Academy of Joseph, but no phosphorus was found. It should also be observed that no smell of phosphorus was perceived in the dead body, and that no phosphorescence was seen either during life or after death.

The most important results of this examination accordingly are, on the positive side, the indications of universal decomposition of the blood, and, of incipient Bright's inflammation of the kidneys; on the negative, the absence of any disease of the stomach. It would, therefore, appear, according to this case, that phosphorus does not, at least always, if in general, as has hitherto been almost universally believed, act as a local poison, since neither during life were any evident symptoms of gastritis or gastro-enteritis observed, nor after death were any signs of inflammation, corrosion, ulceration, gangrene, &c., present in the pharynx and œsophagus, or in the stomach and intestinal canal, appearances which have been described in almost all the manuals as belonging to the post-mortem examination of those who have died from acute phosphorismus. The effect of phosphorus is rather, it would appear from the case I have communicated, general or constitutional, that is, it is taken, most probably in some organic combination, into the blood, the change in which fluid thus produced gives rise to an alteration of the brain and

nervous system, and with this view both the post-mortem appearances and the symptoms observed at the bedside are consistent, viz., the violent pains in the hypochondria, chest, and lastly also in the globe of the eye, caused by no material change, and therefore to be called nervous; the gradual supervention of paralytic phenomena commencing with the sense of vision, and finally the excretion of phosphuretted substances with the perspiration. I think it also necessary to point attention to the state of the kidneys, as the signs of commencing Bright's inflammation found in them, corresponding to the presence of albumen during life, can scarcely be attributed to the existence of renal disease prior to the poisoning, against which is the evidence of the constantly excellent health of the patient; it is, on the contrary, extremely probable that these may have been an immediate consequence of the poisoning, which appears to me so much the more credible, as I have lately been informed, on good authority, that a similar change in the kidneys has already been found in many individuals who have died of poisoning by so-called acrid poisons, which is also explicable when we consider that the kidneys must certainly be brought into co-operation in the increased metamorphosis of tissue necessary for the elimination of an injurious substance from the system.

As to the space of time within which the fatal result of the poisoning occurred, this appears to be rather long compared to other cases on record, namely somewhat over four days; the long duration of the illness can, however, be accounted for, if we bear in mind that the patient rejected a great quantity of the matches by vomiting, that consequently but few of them may have remained in the stomach, and that he took the phosphorus in a solid form, and in an envelope of gum, as it occurs in the tops of phosphorus matches; the same circumstances will explain the fact that no phosphorus could be chemically demonstrated in the body, as has been possible in other cases, as, on the one hand, almost all the phosphorus present in the stomach may have been partly absorbed and partly oxydized within four days; and, on the other hand, even if small quantities may have remained after the death of the individual, these may have been oxydized in the interval between death and the occurrence of the analysis, and during manipulation in the autopsy and analysis, although I believe that at the time the dissection took place there was no longer any phosphorus in the body, as there was no trace of any smell of it. The case I have related would further go to prove that, as has been stated, phosphorus produces death even in very small doses. It lastly remains to mention that the present case afforded no evidence of the excitant action of phosphorus, especially of irritation of the genital system with erections, priapism, strangury, &c., as these have been described in various works.—*Wochenblatt der Zeitschrift der k. k. Gesellschaft der Aerzte zu Wien*, February 9, 1857, p. 97.



Yours
Most faithfully
Richd. J. H. Hutcher

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PART I.

ORIGINAL COMMUNICATIONS.

ART. IX.—*Reports in Operative Surgery.* By RICHARD G. H. BUTCHER, Esq., M.R.I.A., F.R.C.S.I., Examiner in Surgery in the Royal College of Surgeons in Ireland; Surgeon to Mercer's Hospital; and Lecturer on Clinical Surgery, &c., &c.

1. SUCCESSFUL EXCISION OF THE KNEE-JOINT.
2. SUCCESSFUL EXCISION OF A LARGE PORTION OF THE FEMUR.
3. ON FATAL BLEEDING IN PSOAS ABSCESS FROM ULCERATION OF THE CAVA.
4. LIGATURE OF THE POPLITEAL ARTERY.
5. ON THE TREATMENT OF THE SUPPURATIVE CRISIS OF JOINTS BY FREE INCISION.
6. SUCCESSFUL EXCISION OF A LARGE PART OF THE UPPER PORTION OF THE TIBIA.

CASE I.—*Excision of the Knee-Joint; recovery, with an admirable limb.*

I recur to the operation of excision of the knee-joint with a pleasure of no ordinary kind; its history is one of deep interest

to the inquiring surgeon. Established boldly by Park and Moreau, and that, too, by practical illustration amply afforded: nevertheless, by carelessness, mismanagement, and probably incompetency on the part of imitators, it was too hastily put aside, and for years the operation was never mentioned or reverted to except with obloquy. Better things, however, were in store for it: taken up again, and that recently, by one whose name is closely identified with all the improvements of modern surgery (I refer to Mr. Fergusson, of London), he, in his wisdom, skilled in all operative measures, thoughtfully weighed the arguments for and against this bold procedure,—the casualties possible to take place, the advantages likely to occur: the latter turned the balance. Though defeated and baffled at first, he was soon followed and supported by others, who trusted in his example, and success crowned these efforts. Never was a capital operation taken up so quickly, or practised so extensively, as that of excision of the knee-joint, within so limited a period as that since its revival. Surgeons seemed honourably to vie with each other in arriving at the truth, and making every fact known. I may faithfully attest this, because in the accumulated information contained within the two memoirs on excision of the knee-joint that I had the honour of laying before the profession, will be found the ready answers to each inquiry that I instituted from every practical and distinguished surgeon therein named.

In the papers referred to, and published in this Journal, several practical deductions were arrived at from the given premises, and it is with an innate satisfaction I reflect upon the laudatory manner in which my humble efforts have been estimated in the cause of conservative surgery.

The valuable hospital reports, in the periodicals of the day, sufficiently attest the great value of the operation, and it would be superfluous to dwell upon the several instances in which it has been performed during the past year. Though arguing in this way, I trust I shall be excused for laying before my readers the following case, which I operated on a few months ago. I hesitate not in doing so, because it affords many striking features confirmatory of my views, and because it yields me another opportunity of dwelling upon a few points that I would wish further to elucidate and expound.

Timothy Swift, aged twenty-seven years, a labourer, admitted into Mercer's Hospital April 8, 1857. *History.*—In February, 1854, the man was carrying a heavy sack of wheat; he slipped and fell to the ground; the weight crushed the limb.

His left knee suffered severe stretching and contusion, which confined him to bed for nearly three months; after this the joint was stiff, and performed its motions very imperfectly, yet he returned to his employment. Shortly after, a dull pain lurked in it, greater at some times than at others, and some swelling remained. In about seven months after the primary accident he tripped in jumping over a ditch, and violently wrenched the joint a second time, after which he was obliged to remain in the house for several days. A few months passed over, and again he endeavoured to earn his livelihood by employment; at this time frequent exacerbations of pain seized upon the part, and stiffness of the articulation increased. In this way he persisted in working on, but could not run or move the leg rapidly. Things thus progressed until about sixteen months before his admission to hospital, when he was violently thrown from a restive horse that he happened to be riding; the animal fell upon him heavily, bruising the left knee again; immediately after the accident the left leg and thigh swelled rapidly, and the patient was laid up, confined to bed for about six months. After this he was treated by several medical men, but with no marked benefit, when he came to Dublin, in September, 1856, and was subjected in several hospitals to the most appropriate treatment. Not obtaining relief, he became discontented, and placed himself under the care of a quack doctor, who took all the money he possessed, and then dismissed him with the pleasing consciousness that he could not be cured. On the date already mentioned he sought my advice, and was admitted to hospital. Though his general health was not shattered to any alarming degree, there were many symptoms that awakened in my mind an apprehensiveness of tampering any longer with a disease that was gradually, slowly, and surely undermining the healthy springs of life. The injurious consequences originating and set up from the local malady threatened, and that not far off, a more dangerous manifestation of their withering effects,—in few words, the management of the case required decision, promptitude, and judgment. The constitutional sympathy was evidenced by a rapid pulse, never below 100; impaired digestion by a capricious appetite, frequent nausea, often vomiting. The body was but little wasted, yet, on looking to the local changes, a very marked difference existed between the volume of the sound limb and that of the affected one. The right thigh measured in its circumference, at the widest part, $20\frac{1}{2}$ inches, while the corresponding measurement, in the affected limb, was only 15 inches. The widest part of the calf of the sound limb measured

11½ inches, while that of the left was only 9 inches. The outline of the joint was lost, and its configuration spoiled; a puffiness of the soft parts filled up each sulcus around it, so that its walls and boundaries presented rather a cylindrical form. The patella was movable; there was free motion of the leg in every direction; great lateral mobility; that is, on the leg being pressed one way and the thigh to the opposite side, an unnatural amount of lateral motion was permitted, only to be explained by the destruction of the interior restraining ligaments of the joint; flexion and extension, to a certain extent, were permitted; indeed extension was allowed nearly to the full, but flexion beyond a right angle induced the greatest torture: percussion at the heel elicited at once deep suffering and excruciating torture in the joint, so as to make the patient start with terror and alarm; there was no increased secretion within the joint, or marks of abscesses as having ever occurred. It was clear that the diagnosis pointed to thickening of the synovial membrane and ulceration of the cartilages, destruction of the head of the tibia to a greater extent than that of the condyles. All particulars considered, the case was by me considered perfectly suitable for excision.

On the 15th of April, 1857, I proceeded to operate after the following manner, the patient being placed under the influence of chloroform. I adopted the H-incision, the cross line passing beneath the patella; the flaps were with rapidity dissected back, and the shreds of the crucial ligaments spared by disease were divided, and next the lateral ligaments; in freeing the ligamentous attachments to the bones behind, the greatest precaution was adopted; all being separated to the extent required, I swept the knife around the tibia and the femur close to the attachment of the soft parts, and then took the saw bearing my name, and cut the bones from behind forwards. It is necessary here to lay caution on the operator in using the saw; he should ever remember the altered position of the limb, to facilitate the protrusion of the ends of the bones, and according to the angle of elevation must the direction of the blade of the saw traverse. The simple rule I would lay down for the correct execution of the section is this,—the blade of the saw must pass in a direction parallel with a line drawn in the transverse axis of the articulating surface; accordingly, this procedure was carried out; thus, when the limb is placed in a horizontal position, the one in which it is to be maintained for cure, the cut surfaces of the bones will be evenly together, no space will intervene between them behind or before; the wide surfaces oppose each other; all disposition to gliding one from the other

is guarded against, and the most favourable circumstances are insured for intimate union. In the published records of cases it will appear, that, in some instances, the surgeon has had to apply the saw a second and a third time, to make the bones meet; if this be so, I am then warranted in enforcing my advice. By section planned after this method, the condyles of the femur, with their connecting osseous bond, to the depth of a quarter of an inch, were removed, and a slice from the upper surface of the tibia, nearly three-quarters of an inch in thickness, was cut off. To warrant the removal of these parts I may just state, that the incrustating cartilages of the condyles were entirely removed; the head of the tibia was similarly affected, and in addition deep pits were excavated by caries in each condyle, to the depth of a quarter of an inch. This being effected, all the thickened and diseased synovial membrane was clipped away, and the disorganized fatty mass below the patella; not a trace of the interarticular cartilage remained; the patella was coated with lymph beneath, and appeared to have struggled healthily from the disease around; it was, therefore, suffered to remain. Thus, then, the accuracy of the diagnosis was established, and examination of the osseous surfaces pronounced them healthy. Three arteries which bled rather freely were next tied; the flaps at the transverse incision were brought together and maintained so by fine points of interrupted suture, and the lateral incisions were left open for the ready escape of blood and serum, the purging of the cut parts. The leg was with ease put into the straight position, and placed at once in the padded box-splint I had prepared for its reception; a splint was then laid over the anterior part of the thigh and the tapes fastened, sustaining upwards the hinged sides of the box; the foot was steadied by a footboard falling into the grooves within, and thus the leg was pressed upwards, so as to keep the divided osseous surfaces in contact; lint steeped in cold water was laid along the lateral incisions, and maintained accurately in position by the sides of the box when elevated. The chloroform acted admirably: though the man was at first thrown into some violence, yet, after the lapse of a few seconds, he was totally subdued, and slept unconsciously all through. Shortly after the anæsthetic was discontinued, he awoke quickly, and was unconscious of the operation having been performed. Thus, quite conscious, with the limb immovably adjusted, the man was removed from the operating theatre to bed, when he got a full draught of wine. Shortly after, he discharged his stomach, a not unfrequent consequence after the use of chloroform. This sickness should be watched for, anticipated on the part

of the surgeon; and, after emesis has taken place, the pallor, coldness, and collapse, can readily and entirely be removed by a full warm stimulant—none better than a hot tumbler of punch with an opiate in it. Such was administered in this case, and by me in many others, with the desired effect, persistent quietude of the stomach; to restore general warmth, heat should be applied to the limbs and body. In two hours after the operation reaction was fairly established, and the patient complained of pain; a general weeping took place from the external lateral incision, and also from the internal; the quantity was such as to call for interference to check it, and it was very simply done. The sides of the box were let down, and compresses of fine lint laid over the points from where the blood issued most copiously, and finger pressure maintained them in their places; all disposition to hemorrhage ceased by a perseverance in this mode of treatment for little more than half-an-hour; then gently the hands were taken away; a few additional pads were laid over each compress, so that when the sides of the box were again elevated, a gentle and equable support was more forcibly afforded throughout. Thirty drops of tincture of opium were given every third hour; and I ordered ice to be placed in the mouth to quench thirst. 7 P.M. No return of bleeding, and pain not considerable; reaction fully developed. 9 P.M. Pain very trifling, and dozed away; gave a tumbler of punch and thirty drops of tincture of opium, after which he slept steadily; though, before this, he had slight spasms and tendency to startings of the thigh forward; however, this was controlled by the anterior splint and the full opiate, which now completed the sedative influence of the drug.

April 16th. Had a good night, and slept with tranquillity, and this morning is much refreshed; pulse 104; tongue furred, with thirst; urine freely passed in quantity, yet skin hot; limb lying in excellent position, and exempt from pain; took some tea and toast for breakfast. 3 o'clock P.M. Continuing to feel comfortable; opium to be continued. 9 o'clock P.M. Free from pain, no uneasiness whatever in the limb; thirst alleviated by effervescing draughts in combination with the opium, and by the placing of small morsels of ice frequently in the mouth.

17th. Had an excellent night; pulse 100; skin still hot, but thirst diminished; full opiates every third hour throughout the day.

19th. Going on most favourably: the patient slept all night, he took his toast and tea for breakfast with appetite. Let down the sides of the splint, the external and internal alter-

nately, to soak up the fluids discharged from the wounds, which was quite practicable without stirring the limb from its posterior support. The full opiates to be continued.

20th. The patient slept all night without interruption, and this morning his pulse was down to 86, it is soft, yet not feeble; his tongue is clean, the thirst nearly gone, and his bowels gently moved, and urine passes in full complement; he took his breakfast with appetite. I let down the side of the box and soaked up purulent matter, which freely escaped from the wounds; placed dry linen over the pads on either side, but did not lift or disturb it from the surface upon which it rested.

29th. Since last report everything has progressed in the most favourable way; a slight fulness was perceptible towards the inner side of the lower third of the thigh; this, however, was effectually controlled after fifty-six hours' pressure of well-applied graduated compresses, gently directing the discharge from behind forward. The transverse wound is now quite healed, and the lateral ones discharging pus freely, which I cautiously removed each day as already specified, without lifting the limb.

May 5th. This day, for the first time since the operation, I lifted the limb from the box (twenty days after the operation), the anterior splint being firmly held to the limb by assistants, or rather the limb up to it; and renewed all the dressings. No soreness or excoriation of the posterior surface of the buttock, thigh, or back, neither was there any pointing of matter backwards, the lateral incisions affording a ready outlet for it as quickly as it might be secreted.

May 6th. Discharge greatly diminished; wounds quickly closing in; no pain; sleeps without an opiate now, and no tendency whatever to spasm; he eats and drinks freely. Removed to a fresh bed.

June 1st. Ever since last report gradually and steadily proceeding. The discharge has become very much diminished, and the lateral wounds contracted considerably; pressure on the patella gives no pain, and but little pus is forced out by pressure upon it; the leg and thigh are becoming rigidly connected; and pressure on the heel does not in the least degree elicit pain, a sufficient evidence that the change brought about at their junction is a healthy process.

It is unnecessary to continue the daily report: both the careful dressing of the part, the mode of treatment pursued upon the limb, and the dietetic rules prescribed continued to be the same, with but little alteration, up to July 2nd. At this period

a small abscess formed just below the patella; from it matter could be pressed out through the external lateral wound, but I cut short its route, and passed a knife into the abscess perpendicular to the surface; this allowed immediate exit to the contents, and at once almost the propriety of the measure was borne testimony to by the quick consolidation of the parts around, and the total dispersion of œdema and swelling. Now so healthily did the repair go on, and so effectually between the divided bones, that the patient could lift the limb *en masse* from the bed without the least fear. No yielding of the parts was consequent upon this trial, nay more, on taking the limb between the hands and moving the leg and thigh in a contrary direction, antero-posteriorly or laterally, not the least motion was produced between them, an efficient test of the stoutness and integrity of the combining medium, the bond of union. Shortly after this an abscess and sinus formed above the patella, and to the inner side, over the sheath of the vessels in Hunter's canal, the contents from it could be gently pressed towards the internal lateral wound, and thus a ready outlet afforded for its discharge; pads, compresses, and well-applied, broad, adhesive straps obliterated it in a short time with accuracy and precision. The thickening of the parts around, particularly in the vicinity of the patella, was quickly reduced by suitable bandaging from the toes towards the knee, and from the groin downwards, both meeting around and supporting the newly applied and engrafted parts. After each dressing of the limb it was again steadily fixed in my fracture-box.

The review of this case from first to last is most pleasing,—from the beginning to the end there was never any alarming symptom. I attribute the favourable issue to the following causes:—

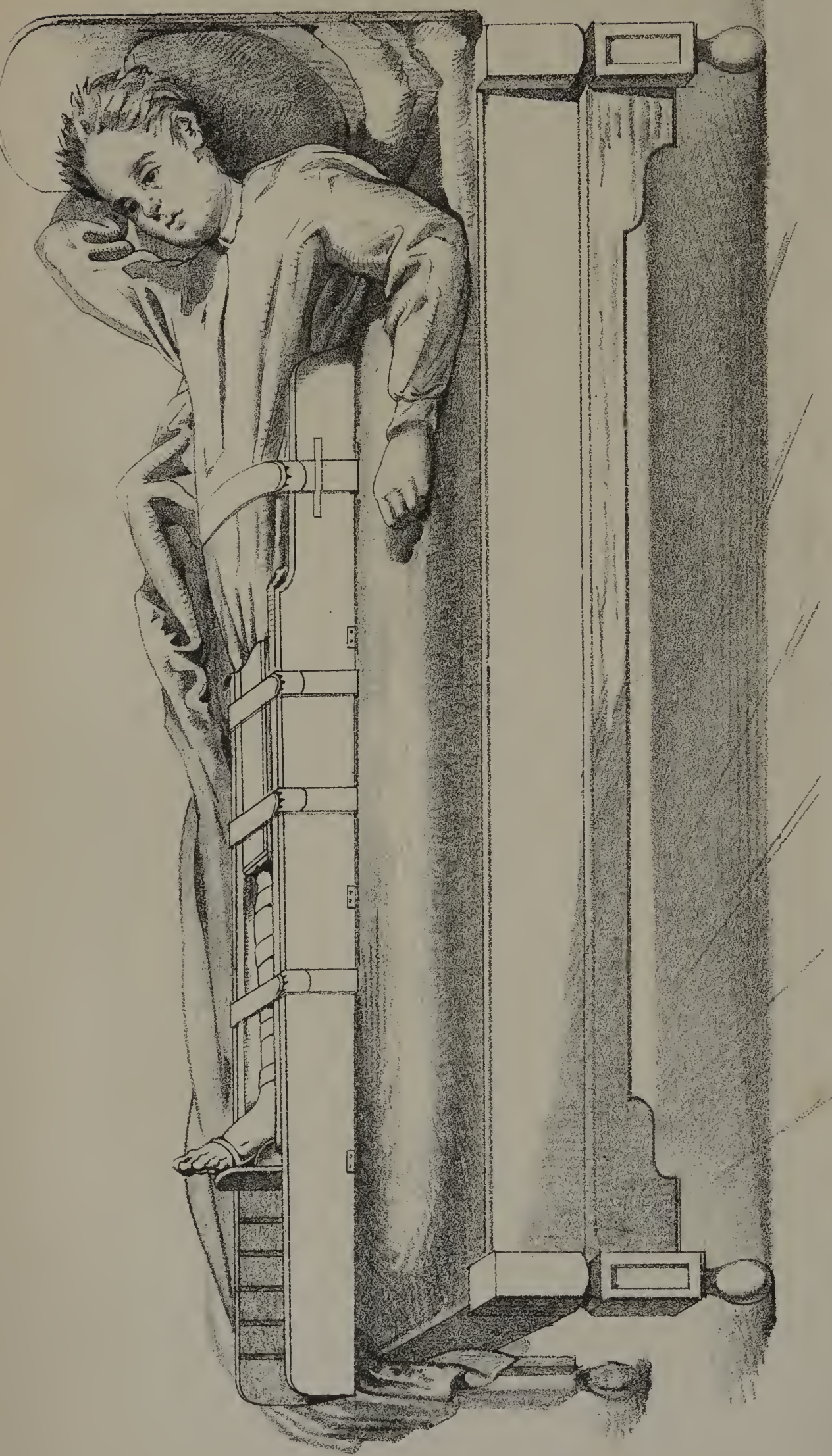
1st. The judicious selection of the case. For, though the joint was irretrievably destroyed, past all hopes of repair, yet the bones were not diseased beyond their articulating surfaces, therefore too large a quantity had not to be cut away.

2nd. The operation was expeditiously done under chloroform; therefore comparatively little shock.

3rd. There was no hemorrhage; no persistent weeping from the wound permitted; therefore but little exhaustion.

4th. The wound being dressed in a special manner, the limb was at once placed in the box, which I have here figured, and the adjusted bones restrained from the slightest deviation forwards, backwards, inwards, or outwards. Moreover, by the adaptation of the foot-board, the leg was kept fairly pressed up against the thigh, which in its turn was sus-

Plate II. Vol XXIV. Page 265.



Forster & Co Lith. Dublin

tained in a contrary direction by the weight of the trunk, the proper axis being secured by the long arm of the splint resting parallel to and against the body. Now it should be borne in mind that this portion of the splint was not as yet lashed to the trunk by the web-girth, because during all this mechanical appliance the patient was insensible, under the influence of chloroform, and any pressure on the chest, so as to interfere with respiration during this tranquil sleep, not only would have been injudicious, but highly dangerous.

5th. The position of the wounds, each lateral one being placed well back towards the popliteal space, thus readily allowing a free exit for all secretions, and effectually guarding against all pouching in the ham.

6th. The quietude, the repose in which the limb was suffered to remain for several days after the operation,—the long period of three weeks having elapsed before it was gently and steadily lifted, after the manner described, from its bed; though prior to this time on several occasions the discharge was readily soaked up, without the slightest disturbance of the member, owing to the construction of the box. From the great facility afforded by it in the management of these cases, I shall offer no apology for representing it here. In my former essays I have dwelt upon its advantages, as well as alluded to it in the management of the case under consideration; its construction and its application having been so often alluded to, it is quite unnecessary to particularize them again. The sketch from which the lithograph has been taken was made by the able artist, Mr. Forster of Crow-street, and the entire character of the representation of my patient as he lay with this mechanical appliance upon him has been most faithfully portrayed.

7th. The full exhibition of opium during those days when wicked irritation might have been anticipated; the due exhibition of stimulants and nutritive diet, from the moment that the stomach would tolerate them at all to the termination of the cure.

The condition of the man at present (11th September) is all that can be desired: long since the box has been laid aside, and the limb is steadied by the application of a splint behind, as in my former case; the bones seem to be grown into each other; there is not the slightest yielding or motion between; it is a permanent union, and resists shocks; the most forcible percussion at the heel neither elicits pain nor motion; the patient is able to rotate the limb from the hip inwards and outwards, flex and extend it with ease and confidence. There

is a slight discharge from the wound on the inner side still, but this I have rather solicited, keeping it open as a drain by which any secretion, either of pus or serum, might readily escape. I have not permitted the man yet to walk upon the limb, though I have no doubt he could do so, and indeed he feels that he could do so if he tried; he lies upon the outside of the bed with his clothes on, and in a few days he will be walking about. The motions of the hip and ankle-joints remain as flexible as before the operation. The subject of these remarks is now as robust and as strong-looking as any man to be seen, and on contrasting the limbs as they rest side by side the amount of shortening is but very trivial. The degree of emaciation is not so characteristic now as before the operation. On the whole, the case is one with which I feel very deeply satisfied. I have casts taken before the operation, and recently since the man was cured; I also have preserved the portions of bone cut out; and all are lodged in my private collection.

Case II.—*Excision of a large necrosed part of the Femur, together with carious portions of the bone in its vicinity, and close down even to the articular surface; Recovery with an admirable Limb.*

Patrick Bourke, aged forty-six years, a powerfully framed labouring man, admitted into Mercer's Hospital, December 19, 1856. When eight years of age he got a severe hurt in the right knee, which was followed by very acute inflammation and confinement for a considerable time. After a tedious process he was restored, with a slightly contracted state of the hamstring tendons. He recovered in this way, and remained free from annoyance, being able to walk long distances without either pain or consequent suffering of any kind. Eleven months before the above date he got "a blow of a stone" on the outside of the lower end of the right femur, a little above the knee, and from the effects of this he was laid up in one of the poorhouses for a period of seven weeks; at the end of this time he was dismissed, and struggled on, suffering great hardships and privations from poverty, owing to the useless condition of his limb: ultimately his sufferings were so great, and his capacity for doing anything so uncertain, that he sought surgical assistance in hospital, May 1, 1856. Previous to this, abscesses had formed on the inside and outside of the joint, and burst, and pus flowed freely even a very short time before his admission on the latter date. Soon the opening on the inner side healed, but the external continued to discharge through the aperture; naked bone could be felt; rest and

quietude and suitable management allayed the inflammation, and he returned home about the middle of June. However, in a short time his quietude was broken, and his sufferings were greatly augmented, so that he came to Dublin and placed himself under my care. At the time when I received him into the house, he was quite unable to walk or rest the limb upon the ground, owing to the sharp tensive pain above the joint; by the aid of a crutch and stick he was alone enabled to move, and it was a sad sight to witness the efforts which he was compelled to make to drag himself along.

He was greatly emaciated; sweating and loss of appetite enfeebled him, while a profuse sanious discharge escaped from the part, characterized by intolerable fetor. The aperture by which this fluid flowed was situated about three inches above the articulation, and on the outer side of the limb; it was a puckered fistulous track, upon which pressure made but little effect; the structures around it were dense, elastic, discoloured, and strained. On introducing a probe I quickly came upon diseased bone; the instrument, as it were, went all through a roughened osseous aperture, and deeper again struck upon an irregular sharpened piece, projecting towards the upper angle of the popliteal space. The probe being curved, and again passed in rotatory movement, made its point traverse freely in at least two-thirds of a circle, proving that a cavity within the irregular osseous entrance absolutely existed, and that the interior of the femur at its expansion was in a state of advanced decay. The limb, in its lower third, was greatly augmented in bulk, measuring nearly twice the size of the left one.

As yet the joint was unaffected; as yet the vessels in the ham were uninjured. It appeared to me that the time had arrived when something ought to be done; when operative surgery should extend its assistance towards cutting short irritation and averting impending peril; at the same time conscientiously to guard against maiming, and endeavour to preserve a limb efficient for the purposes of progression—in a word, to guard against mutilation.

After thoughtful consideration of the case, I determined to cut down upon the part, and act according to circumstances. Thus I proceeded, and after the following manner:—On the 18th January, 1857, an incision, fully from six to eight inches in length, was made on the outside part of the lower and middle third of the thigh; it was parallel to it, the sinus marking somewhat the centre of the wound; it was laid open in its entire track; the tough and gristly texture matting the parts required

considerable pressure of the knife for its division; after a few moments the bone was laid bare, a small portion of the exterior was carious, and, as before recognised, led into a chamber of a considerable size, not only involving the lower part of the shaft, but its expansion into the condyles; a long piece of the shaft, about two inches, started downwards and backwards, and was resting against the popliteal vessels; below this the bone, as previously mentioned, was chambered out by caries. After considerable difficulty the solid displaced piece of the shaft was chiselled and prized out; the force requisite to take it from its bed was very great, so as seriously to threaten the fracture of the limb by tearing through the reparative medium abundantly thrown out on the inner side and in front of the diseased bone. However, it was fortunately removed without this casualty, and all the carious part likewise scooped out with the gouge. Let it be remembered that no bone forceps could cut through the hard piece of bone; no saw could be brought to bear upon it, and the great vessels were in immediate relation with it; therefore it was by cautiously prizing it from its position that its removal was effected. I shall remark here, that by *the free exposure of the diseased part* all the steps of the operation were with accuracy accomplished. There was a peculiar advantage in this rule as applied to this special case, for by rudeness or mismanagement on the part of the operator the great vessels behind might very easily have been injured; and particularly I may speak on the fears to be apprehended from injury to the popliteal artery, because I have been in the ward of the hospital when it gave way from the extension of ulceration in the parts around to its own coats, disintegrating its continuity, and causing copious effusion of blood. For further elucidation, I shall append the history of this case, and the way in which I tied the vessel, to these Reports in Operative Surgery.

Several branches, long inosculating ones, sent down from the external circumflex, had to be tied, both immediately after the primary incisions and after the operation was accomplished, when reaction had fully set in, and by its force projected the feebly retracted vessels. The hollow of the bone was filled up, and the edges of the wound in the soft parts kept separate with dossils of lint soaked in oil; and the entire limb steadied on a splint placed along its posterior surface, and maintained so by suitably applied bandages. Quickly after this tedious operation (through all the stages of which the patient was kept in profound sleep by chloroform) he rapidly became conscious on a discontinuance of the anæsthetic

agent. He was calm, and quite unconscious of the severity of the measures which it was imperative to put in force and to execute. On the patient being removed to bed, the entire half of the thigh and upper third of the leg were enveloped in a warm stupe-cloth, surrounded with oiled silk, and shortly after, wine and opium were freely administered until night.

I saw him at 10 o'clock P. M., and he was composed, awake, but not suffering from pain; his pulse was a little accelerated, but neither tremulous nor unsteady. On the following morning he was wonderfully quiet, free from pain, and reported as having had some refreshing sleep. He took his breakfast, and I saw him at 9 o'clock A. M.; his favourable condition greatly impressed me; ordered to be liberally fed with animal diet, wine, &c., and opium, a grain of the powder every third hour.

18th. Condition most favourable; had sleep; pulse quiet, a little accelerated; urine in full quantity, and the man desirous for food; chops, wine, punch, and opium, freely given.

25th. Going on most favourably; discharge freely established, and quite healthy; regimen and opium as before.

February 12th. Granulations abundantly filling up the chasm; the discharge healthy, indicative of their character, with the local improvement; it is the constitutional evidence of repose, with but little change, all being gradual, progressive. Things went on in a steady way to perfect reparation. On the 25th of February I have it reported that the larger cavity is filled up with firm, dense structure, to the touch elastic, springy, not prone to bleed unless undue violence be exerted; the discharge is only commensurate to the healthy granulations around, and perfecting the repairs—finishing the work.

April 14th. All nearly healed; scarcely a drop of matter; motions of the knee perfect as ever. Into the small sinus yielding the discharge, a solution of nitrate of silver was carefully injected, with the happiest result. After the third application the entire track was sealed up; granulation shot into granulation, and union perfected. A few days hence the part was skinned over, and on the 28th the man was up and walking about, with but little halt or inconvenience; assisted by a stick, he made excellent progression, though now for the first time. On the 6th of May the patient was able to walk about without any assistance from stick or crutch; he suffered no pain in any movement; and I may now refer to the condition of the joint, the motions of which were not infringed upon by the violent measures practised for the exsection of the necrosed and carious bone.

The man was discharged from the hospital with an admira-

ble limb, retaining its full length, firm and unyielding, with almost perfect motion of the knee-joint. In this instance we have portrayed a striking example of the power of conservative surgery to benefit man, when carefully applied. Emaciated in frame, broken down constitutionally by irritation, the patient must have succumbed, if the source of this pollution of the springs of life was not counteracted. One of two things presented: one of two things should be adopted, executed,—amputation of the limb, or excision of the diseased bone. The peculiarity of the case, the projecting piece of dead bone against the vessels, hastened the decision, demanded promptitude. Weight is added to this great question by the following remarkable case, which vividly rested in my memory, as a practical illustration for guidance, and which occurred in the practice of one of the most distinguished surgeons in this country. I speak of William Henry Porter, Professor of Surgery in the Royal College of Surgeons in Ireland, whose ability and whose power are fully appreciated and admitted by all. The case to which I refer is published in the former series of this Journal[a]. It is headed, "Aneurism in a case of Necrosis—Death from Mortification and Hemorrhage." A reference to the case will well repay the reader, and I would warmly commend it to his notice, particularly if he be one of those cautious inquirers after truth; and as a simple meed of justice I would record my impression of the great pathological value of every opinion given by the great surgeon to whom I refer. This I am convinced of, that the stamp of a highly cultivated and matured judgment is upon all his writings. The point to which I wish to refer is the serious consequences that may follow the dislodgment of a sequestrum from its bed. It is well illustrated in the published report by Professor Porter; the "dissection" of the case is thus given:—"On opening the popliteal space, it was found filled with thick grumous clots, extending up as high as the lower third of the femur, in contact anteriorly with the bone, and with something that appeared to be part of the sac, but whether of an aneurismal sac, or the cyst of a former abscess, could not be determined. An opening existed in the popliteal artery, a little below the spot where it enters the space. The thigh-bone was found diseased in its lower half, being considerably enlarged, its surface rough, and a large portion of the posterior popliteal aspect destroyed, so as to permit the introduction of the fingers into a large cavity within; the edges of the

[a] Vol. v. p. 190. 1834.

bone on each side of this opening were thick and very full of rough sharp points; in the upper part of the excavation the sharp point of the sequestrum was discovered, movable and accurately corresponding to the aperture in the artery, which it evidently seemed to have occasioned. The knee-joint filled with a yellowish serum, unlike ordinary synovia; its capsular ligament thickened. The cellular tissue of the entire thigh filled with a reddish serum."

In a former Number of this Journal (November, 1854), under the head of Reports in Operative Surgery, I detailed a case where I had to remove nearly half the lower jaw, owing to the sequestrum starting from its bed, and occasioning from its new position such an interference with the functions of respiration and deglutition as to endanger life. In reference to the point of fatal hemorrhage being occasioned by the irritation of carious or deadened bone, on the coats of a large blood-vessel, I shall relate one I believe to be unique in its character and details. It is the following:—

Case III.—*Fatal Hemorrhage occurring in Psoas Abscess, from the roughened Vertebræ resting against the Cava and producing Ulceration of its Coats.*

This case was in Mercer's Hospital, under the care of my distinguished colleague, Mr. Tagert, Senior Surgeon to the institution, and occurred many years ago. I have to refer back to my case-books for its report, so far past even as 1846; but its value is not lessened, for the report is perfect. I made the post-mortem myself, and I possess very beautiful drawings and casts of the changes produced. There were many points of interest about the case, independent of its peculiar termination. The Report says:—The child was six years of age, admitted on the 26th of October, 1846; name, Anne Kelly. She had been considerably indisposed before admission; at this time there was a large swelling in the upper part of the right thigh; two inches at least intervened between the upper margin of the tumour and Poupart's ligament; the swelling presented an elastic feel, and was considered by some to be a fatty tumour; there had been no shiverings or symptoms for a superficial examination to warrant the supposition that it was an abscess; however, on an exploring needle being introduced, matter flowed, and then a free opening was made into it, and the purulent fluid escaped in large quantity. It was clear now that it came from above, and that most likely the spine diseased was the cause. Yet, on external examination, little pointed to this direction. On the 1st of November the child was covered

with a peculiar form of *miliary* eruption. I have often seen it occur since, after operation, but do not think it has been noticed by authors; it generally subsides, and quickly, after two or three days. The symptoms gradually abated until the 12th of November, when there was a profuse discharge of watery fluid, at first tinged with blood, afterwards more closely dyed with it, of a black colour; whenever the pressure was removed from the surface of the sac it rushed out with immense force; from this discharge she sunk before night. I have in my collection a beautiful cast of the limb previous to the abscess being opened. It is numbered No. 89 in the Catalogue, and this short Report attached:—"Patient, a girl aged six years, of well-marked scrofulous diathesis; fluctuation in the tumour was indistinct, and it had been mistaken for one of fatty origin; there was no constitutional symptoms indicative of the formation of matter: the diagnosis of its being abscess was arrived at from accurate palpation of the part and the most educated sense of touch." The post-mortem appearances are likewise represented in a faithfully coloured cast, taken from the parts after dissection, thus described, cast No. 94:—"Sixteen days after the sac was opened hemorrhage set in; at first the discharge was tinged with blood; in a few minutes dark blood rapidly issued from the sac through the external aperture; and in a few minutes more the child was dead. The cast shows the condition of the parts eight hours after death. The walls of the abdomen being reflected, and an incision carried through Poupart's ligament down along the thigh, as far as the junction of its lower and middle thirds, the following appearances, as presented in the cast, were observable. The peritoneal cavity contained about two ounces of watery fluid tinged with blood; the caput cæcum, and ascending colon, were lifted up from the right iliac fossa and lumbar region by a large coagulum (as seen in the cast) of dark blood, very firm to the touch; this filled the entire iliac fossa, extending upwards within an inch of the origin of the psoas muscle, and downwards along its course beneath Poupart's ligament, when it seemed to bifurcate; one branch of the coagulum passed deep with the psoas tendon, and then expanded so as to fill up the entire sac of the abscess in the thigh; the other coursed comparatively superficial, and lay to the inner side of the sartorius muscle, between it and the femoral vessels, which lay to the inner side and supported on the upper surface of the sac; this division of the clot did not pass down lower than where the sartorius crosses the thigh. The source of the bleeding was from a small ulcerated opening, not larger than the size of a goose-quill,

longer in its transverse axis, in the inferior vena cava, and placed about half an inch above the point where it receives the right iliac vein. The opening in the cava was at its posterior surface, and somewhat to the right side; it was irregular and slightly thickened; while, leading from the margins of the aperture, about four lines to either side of it, were striæ passing up and down, and confirming by their arrangement the opinion of Bichat and Meckel as to the longitudinal fibres of veins. On close inspection of the spine the intervertebral substance between the third and fourth lumbar vertebræ was entirely destroyed, and the lower margin of the body of the third, which was completely carious, projected by a sharp, rough margin, about a quarter of an inch beyond the upper surface of the body of the fourth, which, as it were, was bevilled off from behind forwards and downwards; the projecting portion rested against the vein, and, no doubt, caused the ulceration in the vessel. The piece of bone absolutely projected into it. Between the bones there was a large quantity of most offensive dark pus, which burrowed beneath the remains of the psoas and iliac muscles on the right side, making its escape in that direction. It is also curious, in connexion with this case, that such extensive disease of the spine should have escaped detection, and have given no marked evidence of its presence."

Enough then: I think I have given abundant proof why the surgeon should be apprehensive of danger when deadened bone encroaches upon the walls of even healthy vessels; and, moreover, that his judgment will often point out the propriety of removing the offending body.

In connexion with this subject I shall mention one more most remarkable case, which likewise occurred in hospital practice, where the popliteal artery gave way by slough, owing to extension of destructive inflammation from a diseased knee-joint, and in which I had to ligature the vessel.

Case IV.—*Ligature of the Popliteal Artery in a case of disease of the knee-joint, with extension of unhealthy inflammation from it to the vessel, producing sloughing of its coats and violent hemorrhage.*

John Lynch, aged twenty-eight years, admitted into Mercer's Hospital, under my care, June 16, 1854. Six days before his admission he was carrying a sack of wheat, and in trying to go up a flight of steps he sank under the weight, and his limbs were violently flexed under him, the sack falling down on the left knee in this position. The man experienced great

pain at the time, and was carried home; he remained confined for some hours, but again tried to walk upon it; in twenty-four hours after the accident the joint became greatly swollen, and so painful that he could not stand at all; sleep forsook him; his appetite was gone; and he was admitted on the above date. The patient's condition was as follows:—The joint was immoderately distended with pus; great redness prevailed over and around it, particularly along its inner and anterior walls, and from these aspects extended down the leg and up the thigh; the colour was a dusky hue; there was great œdema, particularly below the articulation over the forepart and inner side of the tibia; great pain was evinced on handling the part, and deep pitting upon pressure; there was no doubt that the intense inflammatory action of the synovial membrane terminated in the secretion of pus. The lateral wall of the joint was bulged out, and the patella floating upon it. For satisfaction I introduced a grooved needle, and pus rested in it; a free opening was then made in the long axis of the joint and on its inner side, and pus and synovia escaped in abundance. The limb was steadied upon a splint, and every means adopted to support the patient and diminish irritation. On the following day the report was favourable,—that he slept well the entire night; the tongue was moist and clean, it was soft; he had no headach; the local appearances were also benefited, the swelling, redness, and œdema diminished, and the pain on handling the part greatly lessened. Owing to the constrained position, the patient was not able to pass water, so I introduced a catheter and drew off fully a pint of urine,—satisfactory evidence that the kidneys were performing their functions. The local treatment was persevered in, that is, keeping the affected joint and subjacent parts enveloped in warm stupe-cloths, with oiled silk outside them,—in other words, in an uninterrupted vapour-bath; and guarding against all motion by the application of a splint behind; the occasional application of leeches to any painful point, in relays, so as to keep up a gentle drain from the part. Mercury was given in combination with opium; the former to produce salivation, and by its salutary influence check the extension of inflammation by altering the action of the capillaries, and thus arrest the progress of ulceration in the cartilages, which there was too much evidence to doubt had already commenced. The opium was given to steady the action of the mineral, and likewise to alleviate pain, to subdue irritation, to secure sleep.

June 19th. Though he slept uninterruptedly, his pulse was feeble and intermittent; he had slight sweat; his bowels were freed three times. Some of this disturbance was traceable

to the action of the mercury, for now ptyalism was gently established. The limb was paler, not nearly so much swollen, but a fixed pain rested over the internal lateral ligament; a few leeches were put on over the affected parts, the stupes continued, &c.; large doses of quina in combination with opium were given with decided benefit. Nutriment, such as rich broths, eggs, &c., were given as rapidly as assimilated.

21st. A small abscess formed over the upper part of the tibia, which I opened, and let out about an ounce and a half of pus; tenderness over the joint greatly diminished, but deep pain, referred to the ham, which was increased upon pressure.

23rd. An alarming diffuse patch of inflammation appeared over the left chest, and a tendency to stripping over the sacrum; I applied creasote with a camel-hair brush over the chest, and the strong solution of nitrate of silver to the back. A second application of the creasote, as if by magic, arrested, removed the inflammation, and left the skin corrugated and pale.

26th. In every respect better, except the ham, where abscess evidently is forming. On this day opened another small circumscribed abscess on the inner side of the knee.

29th. Abscess in the ham perfectly developed; cut down upon it and let escape two to three ounces of pus. Medical treatment as before, and nutriment and wine as freely given as the stomach will bear.

July 6th. Suddenly a remarkable change set in: the joint swollen, with the integuments of a dusky-red colour, characterized by diffuse boggy inflammation. Pulse changed, intermittent, &c. Proposed now amputation as the only means of saving life; but it was rejected both by the patient and his friends.

7th. Matters stationary, and again pressed to remove the limb, but not consented to.

8th. The entire thigh, in its lower third, participating in the mischief, being engorged and edematous. So great was the swelling, that the thigh now measured twenty-four inches in circumference, when a corresponding measurement of the sound limb gave only sixteen.

From this period, up to the 9th, there was a manifest amendment. His sleep returned; the nausea ceased; the respiration became more steady; the pulse lost its intermission; and the tympanitic belly was relieved: in short, all the constitutional derangement was mitigated in a most remarkable manner. At the same time the limb had lost much of its tension and redness, and the destruction ceased to spread.

10th. The very unusual occurrence of terrific hemorrhage

took place, when I had to tie the popliteal artery. It happened in this way:—At half-past 3 o'clock P.M. on the 10th, being summoned to the hospital previous to an operation for strangulated hernia, and being with several gentlemen in the next ward to where this man lay, suddenly the nurse screamed out that he was bleeding to death; a student, who was in the room at the time, quickly ran and seized the limb high up, making effectual pressure on the femoral artery; an assistant took his place, and I at once perceived, from the quantity of blood lost, its character, and the source from which it issued, that the popliteal artery must have given way. Under this conviction I at once proceeded to secure the artery. It was a difficult task: the patient was never taken from the bed in which he lay; he was rolled over gently upon his left side, and the inner and posterior surface of the limb exposed by an incision fully six inches in length, along the inner side of the femur in its lower part; the vessel was reached. I grasped it at the rent, and freed it extensively from the parts around; and, having done so, applied a ligature above and below the opening, the ligatures being fully two inches apart, and the object being to get, if possible, a sound portion of the vessel. All bleeding ceased immediately after this proceeding, which was perfectly effectual as an operation, for not a drop of blood flowed after the vessel was compressed in the groin, and not a teaspoonful was lost in the operation, and none flowed after the securing of the artery. Stimulants were then freely and abundantly given, with rich broths, jelly, milk, eggs, &c.,—everything most suitable towards the formation of blood. He rallied wonderfully after the great loss, so much so that in an hour his pulse was considerable; heat was generated, and I looked for his recovery by care and management. The shock of the rapid though short hemorrhage, was too much for a habit already worn out by irritation, &c.; and though he rallied, it was only like the brilliant transitory flickering of a lamp before it finally goes out. He died eleven hours after, though not a teaspoonful of blood was lost after surgical interference had staunched the flow.

On post-mortem examination and careful inspection of the parts, the joint was found opened up behind, with the results of ulceration destroying all in its track; not sparing the cartilages within, it seized upon the fibrous textures behind, and involved the artery in its destructive course, and thus the hemorrhage; the coats of the vessel had absolutely sloughed to the size of a pea, a portion of the circumference of this killed part was being dilated, and thus the rent created that yielded

the alarming and fatal bleeding. It was now rendered manifest that amputation at the time recommended and pressed for was the only chance of safety. The entire joint was disorganized, its cartilages eaten away; gangrene of the tissues around. Excision of the joint would have been hopeless; amputation dexterously performed, even at this late time, might have saved the man.

That the free incision into a joint, when suppuration is established within, is an admirable practice, *in many cases, I have no doubt;* and though in the previous one it did not arrest the destructive mischief, yet I have seen enough of it to be convinced that it is an expedient most suitable, and to be extolled; it has its place,—so has excision, and so has amputation. On the judgment of the surgeon will rest the applicability of one or the other. As an evidence of the advantages to be derived from free incision of a joint which has suppurated, I shall relate the following case, and dwell upon its successful issue.

Case V.—*Severe Wrench of the Ankle-Joint, terminating in suppuration within its cavity, and associated with diffuse inflammation extending even as high as the knee, treated successfully by free incision.*

Myles Tobin, aged eighteen years, was admitted to Mercer's Hospital, June 14, 1855. When running in a field, his right foot got entangled in a hole in the ground, and he fell sideways, twisting violently the right ankle; he nearly fainted, the pain was so acute, yet on the foot being pulled, and having rested for a time, he was enabled with assistance to walk home, a distance of fully a mile and a half. On the following morning the joint was stiff, but he again went out, being carried on a car; soon he got down and made the effort to walk, but was suddenly seized with "a terrible pain" in the joint, and fell to the ground,—so acute was it in its nature that he screamed loudly with his suffering, and had to be conveyed home. Two days elapsed before being brought to hospital, during which time stupes, rest, and aperient medicine, were had recourse to; and on the above date he was admitted, as follows:—The entire foot greatly swollen, intensely red, and severe pain on the slightest motion, referred to the tibio-tarsal articulation. The poor young man cried hysterically, being pale and worn out from want of sleep and food. A number of leeches were placed about the joint, stupes applied, a calomel bolus given, and a full opiate at night.

15th. No relief; and the joint being puffed out conside-

rably from the formation of matter, I laid it open freely in front, and nearly a pint of pus flowed away. My able colleague, Mr. Tagert, was standing by, and approved of the practice, after which the limb was steadied in a fracture-box, and the part surrounded with warm stupe-cloths. Patient slept soon after for six hours without awaking.

On the 18th matter formed above the joint, in front of the tendo Achillis; I cut down upon it, dividing the layers of fascia, and liberated it; great relief followed almost immediately; opiates freely administered, stimulants, and support.

It was very remarkable in this case how rapidly abscesses formed all through the limb; the one that I had just opened was found to extend absolutely as high as the knee-joint. By properly applied pressure with pads and bandages from above downward, it discharged its contents through the opening which I had made nearly twelve inches lower down, proving at once the rapidity with which disintegration of tissues takes place in such cases, and the urgent requirement of early and free incisions.

13th. An abscess formed on the dorsum of the foot, which I freely opened: and it is worthy of remark in the management of these cases in my hands, that I do not disturb the pads, bandages, &c., for several days, always allowing a free exit for any discharge, the apertures made by the surgeon or otherwise being invariably left uncovered, and thus the secreted fluids allowed to drain off.

19th. The case appeared very unpromising, and amputation loomed in the distance, yet I persevered, and on the 30th the report states that he went on improving: all sinuses healed, abscesses shut up, and the discharge from the joint incision very trifling. Constitutional irritation allayed; he sleeps and eats, and is getting fat.

August 11th. Wound in ankle-joint all healed up, as also the lengthened sinuses and abscesses throughout the limb; gentle motion of the ankle-joint has been persevered in for the last few days, and it is astonishing how nearly it has been restored to its perfect functions.

On the 28th of October he left the hospital, able to walk upon the limb, without either halt or impediment. More than two years have now passed by, and I may mention that a few days since I have seen the young man, and he is working at his trade, without either halt or impediment.

Case VI.—*Excision of a large portion of the anterior wall and sides of the Tibia in its upper third, close to the articulation. Recovery with an admirable limb.*

The following is the history of a case in which I cut out a large portion of the upper third of the tibia, that is, in its anterior wall and sides, saving the healthy articular surface of the bone, and preserving a limb free from *mutilation or deformity.* The patient was a young gentleman aged 20, who for some time in London lived rather irregularly, contracted venereal, and shattered his health. Two years previous to his application to me he had marked secondary and tertiary symptoms, sore throat, pains in the bones, &c.; though his annoyances were very great, his chief one centered in an enlargement and abscess on the forepart of the right leg in its upper third; an abscess formed here, and it burst, discharging matter and blood. This crisis did not check the mischief, for an abscess formed in the ham, and became diffused throughout the limb. In July, 1856, he was brought up to town for my advice, amputation being spoken of as the only chance of saving life; the friends, however, would not submit, and they removed him to Dublin. When called in at this time his health was terribly broken up; pulse 125; he had no sleep; no appetite, and constant sweats,—in a word, he was reduced to the lowest state. The condition of the limb was as follows:—The upper part of the tibia was greatly expanded; the knee buried in swelling, or, in other words, its outlines destroyed; matter filled the ham, and extended to some distance up the thigh and down the leg; there was great tension of the parts, and the lower portion of the leg and foot were swollen with œdema; an opening corresponded to the most prominent part of the expansion of the tibia, and from the irregular aperture streamed out most offensive copious sanies. On introducing a probe, diseased crumbling bone could be detected, at least two inches deep, and about three inches below the upper articular surface of the tibia; the knee-joint was not involved, though all the soft parts around it were thickened and matted together.

The treatment I adopted at this period was the following:—Free division of the soft parts over the bone, to relieve tension; free division of the fascia; closing in the popliteal space, to allow the free exit of matter; compresses and bandages were applied so as to obliterate the several sinuses. Bark and acids, and opiates, were given to improve the appetite, to check sweats, to allay irritation, and procure rest; after-

wards, full doses of iodide of potassium and cod-liver oil. The most nutritive diet, fresh animal food and wine, was freely given; and at the end of eight weeks his condition was so much improved, and his limb so altered for the better, that I sent him back to the country to pursue the same constitutional treatment; and, putting off for the time any operative interference with the diseased bone, I argued that, when all irritation had been subdued, now that all the sinuses in the ham and leg were obliterated, the change to the country air, &c., would hasten his amendment, and render him in that state best fitted to undergo any operation I might think expedient. According to my wishes in every way, these directions were carried out. The young man returned to the country; for a time he rapidly and in a marked way improved; but soon this salutary effect was checked; he ceased to be benefited; his general health began again to suffer, and he was brought up to town.

On the 20th of January, having made a very careful examination of the case, I decided upon cutting out the carious part of the tibia; it was limited to the upper third of the bone, and extended to within about three-quarters of an inch of the articulation; the motions of the knee were perfect, being greatly restored since the period of my former attendance. On introducing a curved probe through the aperture in the tibia, it moved up and down freely; the bone broke down readily on its application; the entire circumference of it was greatly expanded, and the interior was hollowed and softened. I decided on excising all the diseased part, and in consultation Mr. Cusack agreed with me in the propriety of the measure; and on the 23rd I executed it in the following way, assisted by him, Dr. Bevan, and others:—The patient being fully under the influence of chloroform, the soft parts over the diseased bone were freely incised in the long axis of the limb to about six inches; they were freed from the bone, and drawn by retractors to either side; the carious and expanded bone was trephined in two places, at a distance of three inches from each other, and the intervening piece chiselled away with gouge and mallet; so likewise was the interior cut out, upwards, close to the articulating surface, and downwards for about three inches; the posterior surface of the bone was hard and firm, and healthy, while the anterior part and sides were softened, carious, and diseased; thus the posterior wall of the bone preserved its length, its integrity, behind. Blood flowed at first rather freely, but soon ceased to give trouble, and the steps of the operation were conducted steadily and considerately. All

the diseased part being taken away, the wound was dressed from the bottom with lint soaked in oil; the patient was replaced in bed, the limb resting upon its outside on pillows; the entire knee-joint and two middle thirds of the leg were enveloped in warm stupe-clothes, surrounded with oiled silk; shortly after, wine was administered, and a full opiate given. At 11 o'clock P.M. he was lying composed, not suffering pain; he had some quiet sleep, and had partaken of light food.

26th. He slept well all night, and took his breakfast with relish. I removed the lint from the wound, suppuration being established; going on most favourably. It is unnecessary to dwell upon the daily report of this case; as, from the time of the operation up to the present (August) it has progressed most favourably; granulations sprung up freely from the cut-out hollowed parts; they assumed a more firm character, and now the entire chasm is nearly filled up with solid dense structure. A small portion remains open above, which as yet has not been incorporated in this solid bond; it yields a discharge, but so trifling as to give little annoyance, and so manageable as to be dressed by the patient himself. No doubt, a lengthened time has passed over (several months); but what is the condition of the patient now? what has been gained? Why, from being a puny, miserable, dying young man, emaciated to an extreme degree, he is grown into a large, powerful man, his limbs and body so augmented in dimensions, that all his former clothes had to be thrown aside, discarded. His countenance is changed from a sinking, haggard expression, to one of joyous health and satisfaction. The limb, from being a wasted, discoloured appendage, misshapen with œdema, is now well-formed, solid, and keeping pace in bulk with the sound one. No more sinuses, no more fetid, stinking discharges, no more fear in its movements, but, on the other hand, all the watchfulness of the patient is required to prevent, at an unguarded moment, his standing upon it. There is an innate consciousness, appreciated by the mind, that the part is capable of performing its functions in progression; indeed, he has tested it in this way and it was efficient; however, for the present I have prohibited using the limb, or making any attempt to walk upon it, and shall do so until all be permanently healed. The functions of the knee-joint are preserved in all their integrity, and the motions of the hip and ankle are as perfect as ever. This young man moves about with great facility by the aid of crutches, and he is threatening every day to throw them aside altogether.

The operative measures adopted in this case were perfectly consonant with the improvements of modern surgery, and the issue of the case, so far as it has been revealed, is most instructive and encouraging.

Art. X.—*On Cartilaginous Tumours of the Upper Jaw.* By Dr. Oscar Heyfelder, Private Lecturer on Surgery and Ophthalmic Medicine in the University of Munich; Member of the Academy of Naturalists at Breslau, and the Academy of Surgery at Madrid; of the Medical Societies at Vienna, Paris, Leipzig, Munich, Strasburgh, Brussels, Erlangen, Valencia; of Legal Medicine in Baden; and of the Surgical and Anatomical Society at Paris.

Malignant and benign tumours of the jaws are very frequent, and often require operation. One of the less frequent, though not so rare as Mr. Paget[a] seems inclined to think it, is the *cartilaginous tumour*, or *enchondroma*.

Among 450 cases of diseases of the superior maxillary bone I found 74 cases of carcinoma; 48 of sarcoma, &c., and only 8 cases of enchondroma.

This tumour originates either within the maxillary sinus, or within the substance of the bone. Usually it increases slowly, seldom very quickly, and it sometimes remains stationary. If removed, it commonly very soon returns.

Cartilaginous tumours are usually of a spherical or broadly oval form, with smooth and even surfaces, though presenting more or less knobbed, or uneven hill-like elevations and lobes. If cut through, they crepitate under the knife; the interior is white, bright, hard, and consists of a homogeneous mass, or is formed of an aggregate of little tumours of different sizes, held together and surrounded by strings of hard, white, fibro-cellular tissue. The cartilaginous mass is not always homogeneous, but sometimes contains soft, or else osseous or calcareous grumous parts. The cartilage of the enchondroma simulates all sorts of physiological cartilage, and, like all enchondromata, those of the upper jaw are simple or mixed[b]. The former exhibit cartilaginous cells and a homogeneous or striped substance; the mixed enchondroma is combined with different

[a] Paget's Lectures on Pathological Anatomy, vol. ii. On the jaws these tumours are, I believe, very rare.

[b] A. Foerster: Handbuch der allg. pathol. Anatomie, Bd. ii. p. 122.

elements, especially with fibrous tissue, with cancer, with vascular growth, &c.

If enchondromata originate in the antrum, the periosteum, rich with glands[a], is usually their point of departure. They may have existed there long before the patient becomes aware of their presence, and it is not until they touch the walls of the antrum that they will produce morbid symptoms, as other tumours in the same situation will do. The anterior wall forms a protuberance in the face; the median wall produces a narrowing of the cavity of the nose, and by-and-by a dislocation of the nose itself; the upper wall of the antrum, which is at the same time the floor of the orbit, is pushed upwards, diminishing the orbit, pressing the eye forwards, and rendering its movements difficult; the faculty of seeing is impaired or abolished; the hard palate of the affected side swells also in consequence of the tumour; the teeth become painful, loose, carious, and occasionally fall out, a symptom which is described by M. Gosselin[b] as pathognomonic of cancer of the antrum. But every one who considers that the roots of the molar teeth often project into the antrum, and that their nerves and vessels go through very thin canals, or even half canals, on the inner side of the walls, and that in the latter case they are covered only by the mucous membrane and the periosteum, will understand that a tumour, of whatever nature it may be, developing itself towards the under part of the antrum, must produce pain by causing pressure on the nerves, and caries by preventing nutrition through the vessels, and by this means, and by compression of the roots themselves, it will occasion looseness and loss of the teeth.

When the enchondroma increases still more, the deformity augments a great deal; the posterior nares are destroyed, the septum nasi is perforated, and the tumours appear through the nostrils, and may enter the opposite antrum; in consequence of the compression of the lachrymal duct, the tears run over the cheek; in consequence of the obstruction of the Eustachian tube, deafness arises: and if the tumour increases towards the fauces, mastication, deglutition, and respiration, are impeded. By surrounding the articulation of the jaws, the opening of the mouth may be rendered difficult. The tumour may perforate the base of the skull, and the patient may die by suffocation, or compression of the brain, or with sanguineous apoplexy.

The osseous walls may be destroyed and perforated by pressure, but there is never infiltration of their substance (the point

[a] Luschka: Virchow's Archiv. [b] Gazette des Hôpitaux, p. 250. 1852.

of connexion between the enchondroma and the bone being usually circumscribed); neither is there a tendency to suppuration within the adjacent bone or soft parts, nor infiltration of the neighbouring lymphatic glands, nor of any distant organ; neither is there any implication of the system at large.

CASES OF ENCHONDROMA OF THE UPPER JAW.

Case I.—I have before me a morbid specimen taken from a woman, aged fifty-six years. In the notes of the case it is recorded that a tumour began, twenty-four months previously, to develop itself in the left antrum, but very probably it existed long before without producing any remarkable symptom, and, therefore, without being observed.

The growth is of the size of a man's head, and consists of three lobes, divided by superficial indentations. Two of these belong to the left side of the face, which is extended a great deal more than the right. The nose appears almost totally flattened, the nostrils are reduced to oblique slits; the left bulbus is covered by the tumour and by folds of the skin; the right one is intact. The skin is distended, unaltered in texture, without any trace of inflammation, and is fixed by tense cellular tissue to the surface of the tumour. The enchondroma originating from the left antrum has distended, the interior especially, and the upper and the lower walls. In the centre it presents as a residue of the maxillary sinus a hollow of the size of a small nut, communicating with the nose. The posterior part of the cavity of the nose and the posterior nares are preserved; the anterior part of the nose is compressed, so that its walls come laterally into contact. The upper parts of the tumours occupy on each side, the frontal process of the maxillary bone and the nasal bone, and extend themselves upon the surface of the frontal bone, leaving intact its sinuses.

The hard palate and alveolar process are transformed into a shapeless, irregular, knobby mass. The antrum of the right side is greatly distended. The section of the tumour made through the left side appeared partially ossified, especially round the antrum, and in the parts adherent to the nasal bones. The periphery of the tumour shows traces of pure cartilage. There is no osseous shell on the outside of the tumour; it therefore belongs to the enchondromata without osseous shell[a]. With the microscope I found it to be composed of an amorphous, here and there fibrous, fundamental tissue, with large

[a] Rokitansky, Pathologische Anatomie, Bd. ii. p. 175. Second Edition.

cartilaginous cells, with ossifying cartilaginous cells of different degrees, and with complete osseous corpuscles.

Case II.—Partridge removed an ossifying cartilaginous tumour, with a part of the nasal process of the superior maxilla, to which it adhered. The tumour had developed itself within twenty months, had been removed eight months before, and very soon formed again in the same place.

Case III.—Stanley, in his Illustrations of Diseases of the Bones[a], gives the drawing of an enchondroma of the size of a goose-egg, which grew out of the left antrum of a lad of fourteen years; it increased slowly, extended the walls of the antrum, especially in the direction of the face and upwards; perforated the orbit, protruded both eyes, and extended through the base of the skull into its cavities. On section it was found to present isolated patches of ossification. Posteriorly there was a smaller, soft, vascular tumour, of a reddish colour, adherent to the first.

Case IV.—Gensoul[b] removed the upper jaw-bone with a fibro-cartilaginous tumour, of the size of a man's fist. It had grown in the sinus; presented a globular form, an even surface, a well-defined outline, and loose cellular connexion with the adjacent parts.

Case V.—Langenbeck[c] performed two partial resections of the upper jaw-bone with enchondroma, once upon a lad of fourteen years, in good health, and of blooming appearance. The first symptoms which the patient observed were filling of the left nostril and protrusion of the left eyeball, without any pain; the septum nasi was dislocated towards the right side; the hard palate was pressed downwards, was soft and compressible; all the space behind the velum palati was filled with the same hard, elastic growth. Langenbeck removed the nasal process of the maxillary bone by means of the pannel-saw, and separated the tumour from the spina nasalis posterior, where it was attached. The specimen is preserved in Langenbeck's museum, and presents an example of an exquisite enchondroma, of homogeneous consistence, ossified at the base; its colour is bluish-white; the tissue poor in fibre; the cells are large, with concentric rings, and for the most part with radiated nucleoli; the intercellular substance is clear and very transparent.

[a] Plate xvii. Fig. 3.

[b] The Lancet, vol. ii. p. 176. 1852.

[c] Lettre Chirurgicale sur quelques Maladies graves du Sinus Maxillaire, page 9. Paris: 1853.

Case VI.—In the second case Langenbeck removed the nasal process, and the anterior wall of the antrum, by means of the pannel-saw, chisel, and hammer, from a man twenty-six years old. Both operations were successful.

Case VII.—Of another enchondroma, I got but this notice in Paget's work, above mentioned:—"I know but one specimen of the upper jaw alone; a great tumour, portions of which are preserved in the Museum of Guy's Hospital, and of which the history, by Mr. Morgan, is in the Hospital Reports."

Case VIII.—Another case, mentioned by the same author, belongs only conditionally to this place, the enchondroma having originated from the ethmoid bone, and invaded only secondarily both the upper jaw-bones.

Of these eight cases four were males, one was a female, and in three the sex is not stated. The youth of the patients is worthy of note, the eldest being fifty-six, the next twenty-six, one nineteen, and two fourteen years old. In three instances the tumours grew from the antrum; in two from the nasal bone; in two from the jaw-bone in general, and in one from the ethmoid bone. One tumour, of the size of a man's head, is reported to have grown in twelve months, while the growth of one of the size of a hen's egg extended over twenty months.

In five cases we have before us pure cartilaginous growths, with or without partial ossification; in one case the enchondroma was combined with a soft vascular tumour. The size of the tumours varies between that of a hen's egg and that of a man's head. In three cases the nasal process of the superior maxillary bone was resected, once together with the anterior wall of the antrum; in one case an extirpation of the tumour took place, probably with a partial resection of the bone; in another case with total removal of the upper jaw. In three cases no operation was performed, the growth having increased too much, and penetrated even into the cavity of the skull.

One of the operations was performed in consequence of a relapse, after a removal of the growth eight months previously; two of the other operations were permanently successful; whether the other two were also successful, or whether they relapsed, does not appear from the published reports of the cases.

Art. XI.—*Essays on the Natural History of Syphilis.* No. IV By William Henry Porter, M. D., Professor of Surgery in the Royal College of Surgeons in Ireland; Surgeon to the Meath Hospital and County of Dublin Infirmary; and Consulting Surgeon to the City of Dublin Hospital; &c., &c.

The syphilitic virus once having entered the system, generally, although not invariably, proves its presence by the development of certain symptoms, which, in their usual forms, appear in a regular order of succession, thus exhibiting a vast variety, not alone with reference to the parts engaged, but to each particular class of symptom,—that is, not only is the primary symptom different from the eruption, and the eruption from the enlarged testicle or carious bone, but there are varieties of each of these, of the chancre, of the eruption, and, indeed, of almost all the symptoms that tend materially to complicate the subject. And farther, these difficulties are still increased by the consideration that many other diseases furnish symptoms so similar as to render it impossible to predicate any sore, or any symptom of syphilis, without a chance of error or mistake. This seems to be the chief cause of the uncertainty and confusion observed in practice. Notwithstanding the prejudices entertained against it, I feel convinced that almost all persons are willing to resort to mercury, provided only they can be assured that the disease to be combated is really syphilis; the objection not being so much to the absolute risk of danger from the mineral, as to the undergoing such annoyance, and privation, and suffering, possibly without the least necessity. In the present state of our knowledge, an accurate diagnosis is altogether unattainable,—perhaps it may ever remain so; but obviously the first step to improvement is in the right understanding of the position we at present occupy, and of the facts and observations that gradually led to it. This, then, will lead to the consideration of two very important questions,—one, as to the circumstances that might cause the products of the poison to be mistaken for other affections, or others for them, embracing the subject of syphiloid diseases, or pseudo-syphilis; the other, whether these products are the results of one poison or of several: it is obvious that this discussion must be conducted with a frequent reference to mercury, for it was with a view to the avoidance of this much-dreaded medicine that the subject was ever investigated.

As far as I know, John Hunter was the first writer on syphilis who stated that many sores occurred on the genitals

which were curable without the use of mercury, and were not afterwards followed by any constitutional symptom whatever; in other words, that there were many sores not syphilitic: this position, if true, would seem to imply, that previously all ulcers so situated were regarded and treated as venereal, and affords no very brilliant picture of surgery as it must have then existed. This discovery, however, which really embraces almost all that is known at present, was at first of little practical value, for all symptoms found on the organs of generation, and all states of these symptoms, still continued to be submitted to the same remedy: formerly it had been used because they were supposed to be venereal,—now as a test to determine whether they were so or not. Under this treatment, if the ulcer healed, or the symptom disappeared, it was well; if it did not, but became worse, it was regarded as a proof of being more decidedly syphilitic, and the only medicine that could be relied on for the cure was more abundantly poured in. I am not now about to allude to the evil that flowed from this practice, that having been already noticed, but simply to point out the views that were generally entertained, as illustrated by the prevailing practice. Howard, Bell, and many others, of, perhaps, inferior authority, all taught that as syphilis could not be eradicated except by mercury, so the symptom thus removed must surely have proceeded from that poison. Up to the early part of the present century I find no mention made of pseudo-syphilitic disease.

About the time that Mr. Ferguson's remarkable paper appeared, several others were published by military surgeons, the object of which was to show that all ulcers whatever, occurring on the genitals, might be cured without the use of mercury, and that of these the great majority were not followed by any secondary symptom; nay, that in most instances the effects of the medicine were both useless and injurious,—useless, inasmuch as that all the symptoms of the disease hitherto regarded as lues venerea, secondary as well as primary, were removable without it; and injurious, in that it aggravated the primary sore to a most destructive extent, and afterwards, when the secondary symptoms appeared, caused them to assume a more exasperated and unmanageable character. These experimental facts, coming at the same time with Mr. Ferguson's observations on the direful effects of mercury in the Peninsula, caused an extraordinary revolution in professional opinion, the extent of which can only be estimated by recollecting that up to this time the effect of mercury on a sore had been regarded as the test of its nature, whether it was venereal or not. According to the usual test, it now appeared there was scarcely such a

thing as syphilis at all; these sores and symptoms were merely syphiloid. And this doctrine was not only entertained, but acted on. Several military surgeons undertook to treat the disease without mercury, and, if I am rightly informed, under the orders of the late Director-General of Military Hospitals not a grain was administered in the British army for some years. I know that in the year 1825 no mercury was employed in the hospital of the battalion of the Guards then quartered in this city. Of course nothing was gained by the practical operation of a principle so hastily adopted and so illogically sustained. All that had been actually proved was, that all sores and symptoms, whether syphilitic or syphiloid, might be removed without mercury, and this might have been ascertained in any lock hospital in three months, had the attention of the surgeon been pointed in that direction. As it happened, our information stopped there, for, instead of seeking some diagnostic mark by which the true venereal might be recognised, the object seemed to be to determine statistically the proportion of secondary symptoms that followed on any given number of cases. Prominent amongst the investigators of the day was Mr. Rose, whose position as surgeon to the Guards afforded him an opportunity of observing his patients for months after the primary sores had healed, and whose opinions commanded the greater respect as being the apparent deductions from experimental observation. His experience extended over a period of a year and nine months, a space of time far too limited for any useful purpose; he treated all sores on the genitals without mercury, and they all got well, although he says some of them must have been syphilitic. Upon an average, one out of every three cases thus treated had some constitutional affection, but (as he says) not such as would be considered venereal. And what were they? *Papulæ*, *iritis*, *pains in the bones*, *pustules*, *stains like dappling*, *sore throats*, *loss of hair*, *deafness*, *and patches on the mouth and lips*. I have already taken occasion to express an opinion as to the practical inutility of syphilitic statistics; certainly, when I examine the above list of symptoms that "would not be considered venereal," I am not at all disposed to modify that opinion on the score of accuracy of diagnosis.

But the change of professional opinion and practice on which I am now adverting must not be attributed to any one circumstance alone, however influential it may appear, for many contributed to it. A few years previous to the period above alluded to, the late Mr. Abernethy published a tract on diseases resembling syphilis, or, as he rather unhappily termed them, "pseudo-syphilitic diseases." He stated (as had been previously

noticed by Hunter), that numerous sores occurred on the genital organs, as consequences of illicit intercourse, that were not of a syphilitic nature; and farther, that secondary symptoms also, in every respect resembling those of lues, occasionally made their appearance, although the system was in reality uncontaminated and free from disease. The most startling part of this tract (and most undeniably startling it must have appeared at the time) is where the author details cases of excavated ulcers in the tonsils, and copper-coloured blotches on the skin, that had disappeared without the use of mercury, and had never reappeared, or been succeeded by other symptoms, up to the period at which he wrote. But Mr. Abernethy starts with the principle so forcibly put forward by Hunter, that a really syphilitic symptom will continue and increase until relieved or removed by mercury; and it was solely and simply because these ulcers, whether on the penis, or in the throat, and these copper-coloured blotches, disappeared without the use of the medicine, that he called them pseudo, instead of really syphilitic. To us now, the facts and arguments contained in this tract are of little value; but then they proved to demonstration the existence of diseases resembling syphilis, some of which not only could be, but actually had been, cured without mercury, under the observation of one of the most distinguished practitioners in London. Pearson had just given a fearful description of one of the poisonous effects of mercury; and Alley and Moriarty, about the same time, published their accounts of another of the sad effects of the metal, more painful and more loathsome, though less dangerous to life, than the other. The excitement on the subject must have been rather great, for both these latter gentlemen obtained the honour of knighthood for their works. The army surgeons declared that mercury was useless and injurious, and professed to cure all forms of the disease without it. Now this accumulated mass of evidence was brought forward at a time when syphilis and mercury held such close relation to each other in the minds of practitioners, that not only was the medicine absolutely necessary to the cure of the disease, but the fact of its curing it or not was made the test of the existence of the poison. If a sore healed without resort being had to the medicine, or if, after it had been used, a sore refused to heal, in either case it could not be truly syphilitic,—a new name must be provided for the new disease: it was syphiloid, or pseudo-syphilitic. It is now manifest how closely this subject all through is identified with mercury.

With the explanation now afforded, it will not be difficult

to form a simple, and at the same time a satisfactory notion of what is meant by pseudo-syphilis : it is really a compound term, comprising several varieties or species. It is familiarly known that, as the result of impure connexion, a great variety of ulcers appears on the genital organs of both sexes; some of these to be afterwards followed by constitutional symptoms if mercury be not employed, and some not; but all of them possibly removable without applying to the remedy at all. The sores so healing, and not succeeded by any secondary symptom, are pseudo-syphilitic. Again, when constitutional derangements arise, they also appear in a very great variety of symptoms, and all are removable without the necessary employment of mercury; but if the medicine is used, some are observed to disappear obviously under its influence, some are not affected by it, and some are manifestly injured, and become aggravated by its use. Where mercury has not been employed, and the sore throat or the eruption has disappeared, and never returned, or been succeeded by any other symptom, such case (if ever there was one such) might indubitably be called pseudo-syphilis; and where mercury has been fully and fairly employed, and the disease has obviously become worse, it is called pseudo-syphilis also. Now, when these cases are analyzed, one appears to bear no relation to syphilis at all, except that it is contracted in the same way, and, being situate in the same parts and structures, must bear some resemblance to it; the possibility of the second is somewhat more than problematic; and the third is evidently an example of mercurial disease, which, however it may have followed, or in any other manner borne a relation to syphilis, is in no respect entitled to the name. But let us examine the subject practically. No matter about a name, it is but a word, and may be correctly applied or otherwise; but here it is made to represent a doctrine that is too generally received and acted on, and which, therefore, in its truth or falsehood, must exercise an important influence on mankind. It may not, perhaps, be strictly correct to introduce these remarks in a mere theoretical essay, but I cannot state my views accurately without them.

It is admitted on all hands that a great variety of ulcers occur on the genitals as the consequences of impure intercourse, and that some of these do not require mercury for their cure, and yet are not followed by any constitutional symptom. Can such innocent and harmless ulcers be distinguished and marked off? or, in other words, can the syphiloid symptom be pointed out and displayed in contradistinction to that of the genuine syphilis? In this direction, where progress would be

so invaluable, I insist that none whatever has been made. If inoculation is relied on as a test, it has been already shown to be inadequate and imperfect, unless performed on a different and a healthy person. If the hardness of the base of the sore is believed to be characteristic, many sores not so circumstanced are followed by secondary symptoms, and *vice versâ*. If it be tried by the effects of mercury, it has been clearly established that every sore of every kind may be healed without this medicine. Therefore, although I acknowledge that some, nay, that many, or even the majority of these primary sores may not be syphilitic, yet I am ignorant of the mark or character by which one can with certainty be distinguished from the other. That the genuine secondary symptoms are often irregular in appearance, indefinite as to time of development, and uncertain in order and duration, must be admitted also; that is, they so frequently deviate from what we are accustomed to consider as the proper forms and course of the disease, as scarcely to fall within its domain; and, therefore, I cannot with safety pronounce that any suspicious symptom is perfectly innocuous,—it may, notwithstanding any imperfection of character, be syphilis nevertheless. Thus, doubtful symptoms occasionally, nay, frequently, present themselves, which I know to be difficult, if not impossible, clearly and unmistakably to mark off as syphilitic; but I also know it to be more difficult and infinitely more hazardous to aver that they are not so, and therefore practically I disbelieve in the existence of pseudo-syphilis at all. If there is any meaning to be scientifically attached to this name, it must have reference to symptoms so far resembling the genuine disease in appearance and history as to be easily mistaken for it, yet so unlike in their general properties as not to taint the constitution, or demand the antidotal operation of mercury. Such a disease may possibly exist in the solitary instance of chancre, but if secondary affections are included, I believe it never does—at least I have never seen it; but I have seen very deplorable consequences from the really syphilitic symptoms being so regarded and managed, or rather mismanaged, accordingly; and where there is such room for doubt, and where a mistake may involve the health and happiness of hundreds, I think this practical incredulity, if an error at all, is one that may be easily pardoned, for if it leads to the unnecessary employment of mercury with a few patients, it will certainly save numbers from the destructive ravages of confirmed lues. But in offering these observations, let it be clearly understood that I refer to the disease in its original and simpler forms, and not to it after

its characters have been altered and (if I may be allowed the expression) spoiled by inefficient and injudicious treatment, for in my attempts to become acquainted with the pseudo-syphilis of the present day, I find it almost uniformly to hold some mysterious connexion with mercury. The ulcer that heals without mercury is pseudo-syphilis ; the symptom that resists the medicine, and will not heal, is pseudo-syphilis also; the disease in which it has been used partially and prejudicially, and the complications of syphilis with mercurial disease and with scrofula, are all spoken of under the same appellation. It seems to be something that has arisen out of an earnest desire to escape the use, or apologize for the abandonment, of a much-dreaded medicine, and is applied to every affection in which such medicine can, by any stretch of imagination, be supposed to be useless or injurious. Is not this, in some respects, a return to the state of practice three centuries ago, and an illustration of its history at all times ? At one period mercury is abandoned, because of the dreadful ravages it confessedly commits, and the reason is openly and fairly stated. Now the same line of practice is attempted, because, forsooth, it is not required; it is not syphilis we have to deal with, but a pretentious disease that resembles it. But I look forward to the same result in both instances. As the use of mercury has been again and again resumed, in despite of every obloquy,—nay, in despite of every mischief wrought by the most cruel mismanagement,—so will it in the present instance, if the lues venerea is to be cured. Doubtless, under the modern system much apparent good has been effected, and a vast deal of actual suffering spared, for it may not be denied that we have now nothing like the destruction and misery that were but too prevalent under the hyper-mercurial system,—I mean that which inculcated the unsparing use of the medicine for every sore and in every constitution. But in lieu of these evils it is greatly to be feared that we have secondary symptoms infinitely more prevalent, and especially that one which I have adopted as the only true criterion of the existence of the syphilitic taint,—namely, the production of a putrid or pocky offspring. Which of these evils may occasion the more deplorable consequences to society, it is not my province to inquire: fortunately, the scientific practitioner, who understands the resources of his medicine, is not driven upon either, and both may be avoided by subjecting to a careful, well-regulated, and judicious mercurial treatment, "every symptom so far resembling the genuine disease in appearance and history as to be liable to be mistaken for it."

It was about the same period, or perhaps a short time subsequent thereto, that the late Mr. Carmichael was appointed one of the junior surgeons to the Lock Hospital then maintained in Dublin. I know not whether he had previously formed certain opinions, and merely waited to have them matured and confirmed by hospital experience, before he gave them to the world, or whether they were the results of observation within its wards; but, very soon after his appointment, he commenced a course of clinical lectures, in which he first advanced those opinions relative to syphilis which have since attracted so much attention, and doubtless will connect his name with the advancement of surgical science wherever this formidable disease is known or treated. He was comparatively but a young man when he received this appointment, yet his clear and scientific mind at once perceived that all the late inquiries had been made in a wrong direction, and that the facts elicited were useless for want of arrangement and general application: he resolved to avail himself of the opportunity now presented, and attempt the investigation of a subject that had for centuries occupied the wisest and most learned, and seemed to have baffled them all. It had been already marked out for him that the primary sores arising from impure connexion were various in their characters and consequences, and he attributed this variety, not to modifications of the one syphilitic poison, but to the presence and influence of a number of different poisons, each occasioning its own characteristic primary ulcer, to be followed by its own proper and peculiar train of secondary symptoms. In order to establish this position, it was necessary to classify and arrange the primary sores, and describe each according to its prevailing characters, and, this being accomplished, to point out the particular eruption and sore throat that would inevitably follow; so that each train or group of symptoms should constitute in itself one disease perfect and complete, and not a mere portion of one, however large and important that portion might be. But it had also been shown that many, nay, that all the symptoms of lues venerea were curable without mercury,—I fear a sufficient distinction was not always made between the ideas of a perfect cure and a mere removal or disappearance of a symptom; at all events, it was generally believed that many genuine syphilitic cases (as in the army, for instance) had recovered without mercury, and it was necessary to point out which, if any, of these newly-arranged groups were so curable. How far he may have succeeded in this attempt it will now be our business shortly to inquire; and if in the end we are compelled to dis-

sent from his views, we must, at all events, accord him the credit of having chosen the course in which discoveries, if made, would have proved most valuable, and of having pursued it in the true spirit of philosophical and at the same time practical research.

Called by whatever names we please, there can be no doubt that a great number of different kinds of ulcers are produced on the genital organs by impure intercourse; and that many of these are harmless, will not contaminate the constitution, and are curable without mercury, no one of any experience will be disposed to deny. In one sense, therefore, a plurality of venereal ulcers must be admitted. But of these I exclude all that are not followed by constitutional symptoms, as bearing no relation whatever to the poison of syphilis. Now, when the system manifestly is contaminated, and secondary symptoms make their appearance, there is still a variety of eruptions with the most remarkable diversity of character; each writer on the disease enumerating a different number, and some, from their complexity, abandoning all attempts at classification whatever. Again, if we look to the throat, the eye, and other structures, we observe nearly the same variety; and, to carry the observation to its utmost possible limit, let it be recollected that even pocky infants are not all alike: some perish untimely, and are abortions; some are brought forth not only dead, but partially decomposed; some come into the world incurably diseased, and die in a few days, in despite of every treatment; whilst in others the symptoms are developed at a later period, and readily yield to mercury. Whence this diversity? Why should a chancre in one man be followed by a papular or scaly eruption, but slightly disturbing the patient's health, and scarcely withdrawing him from his ordinary avocations; and in another be succeeded by tubercles and rupia, foul and painful ulcerations, and wasting fever? Those who recognise but one syphilitic poison consider all chancres, however differing in appearance, as being inherently and intrinsically the same, but that the seeming modifications of character are caused by the structure and situation of the part in which the ulcer is placed; by some peculiarity in the patient's constitution; by the virulence of the poison having been weakened by having passed through a number of individuals; by the patient having taken more or less of mercury; and they are obliged to acknowledge that perhaps there are numerous unseen and unknown influences tending to the same result. This, after all, amounts to little more than stating a fact, and then adducing, as the cause of that fact, a number of circum-

stances just as obscure and imperfectly understood. Others, however, attribute the variety to a diversity of poisons, producing a diversity of sores, each of these latter being followed subsequently (with no more deviation than occurs in other diseases) by its own proper train or group of symptoms, and running its own proper and peculiar course; and it must be added, that of the sores so followed by constitutional disturbance, or rather of the diseases so constituted, there are some extremely mild in their characters, said to be susceptible of cure without the aid of mercury, and some in which the employment of the metal is said to be prejudicial. Now this latter, which was Mr. Carmichael's view of the subject, is unquestionably the most plausible, and such as a *prima facie* view of the phenomena would seem to encourage: nay, there is no reason why any man may not adopt it as a theory or an opinion as well as another as little capable of proof, provided he does not carry into practice the idea that there is any one of these poisons removable without mercury. The pseudo-syphilitic symptom (if there is such) may be so dealt with; but it will prove hazardous to tamper with any form of secondary disease, no matter whence it may appear to be derived, or by what name it is technically designated.

But to proceed with this doctrine of a plurality of poisons. It is, it can be, of no consequence whether there is one syphilitic poison or twenty, if the same mode of treatment is required for all; but if there be even one only of the twenty to which a milder and safer treatment may be applicable, and if I can discover and mark off that one so that it shall be easily recognisable by myself and others, I have, *pro tanto*, simplified the practice of surgery, and conferred a valuable boon on mankind. It remains, then, to be inquired into, whether this has been accomplished, and to what extent. Now, first, let it be observed that the occurrence of any primary sore does not necessarily involve the sequence of secondary symptoms of any kind or description; it is true, such sequence is the more ordinary course of events; but, nevertheless, many patients treated without mercury, and supposing themselves cured because they exhibited no constitutional symptom, have infected their wives, and produced pocky children. That is a fact that I have adverted to in a former essay; it has repeatedly fallen under my own observation, and I imagine (however wilfully overlooked) must have occurred within the experience of others. This case can belong to no group or chain of symptoms, when it only exhibits the first and the last. Secondly, suppose some constitutional symptom to succeed any given chancre, and to

disappear afterwards spontaneously, or be removed by an insufficient quantity of mercury, should another eruption break forth at a subsequent period, it by no means follows that it shall be of the same kind or character as the first one; evidently showing that two different kinds of eruption, or perhaps more, may follow on the same sore. Again, it seems that those who group the symptoms of syphilitic disease, having reached the eruptions, are obliged to stop there, and can pursue the train no farther. No one can tell what particular patient shall have iritis, or what group or succession of symptoms will certainly entail a swelled testicle, and so much incertitude hangs over the syphilitic affections of the periosteum and bones, that some hesitate to believe that they do or can occur except as the result of some mercurial complication. Farther, I do not find it even asserted that any one kind of eruption is so completely devoid of syphilitic taint that the person who has suffered from it, and been cured without mercury, can rest perfectly satisfied that his or her offspring shall be born pure and healthy. I know how difficult it is to shake any opinion deliberately formed, and how easy to deny any assertion that has a tendency to impugn it. I am quite aware that persons have been so absurd and so obstinate as even to question the existence of the syphilitic infant, and therefore cannot claim for my opinion more respect than has been conceded to others; but if any reliance can be placed on the evidence of the senses, I am satisfied that I have seen syphilis exhibited in the children of persons who had suffered from each and every form of cutaneous disease usually attributed to that poison,—the scaly, the papular, the pustular, the tubercular,—all seemed to be alike contaminated, and displayed the same loathsome appearances. Now let any practitioner show that this position is untenable; let him produce the syphilitic or syphiloid symptom which he will not treat with mercury, and yet guarantee that his patient shall have healthy children; or, if the children are diseased, let him foretell what peculiar form of disease it will be, and foreshow its deviations from the ordinary forms of syphilis, and at once I will acknowledge the truth of the doctrine, and adopt it in all its parts. But if the contrary is the fact,—if the ultimate results of a poison are always the same,—I must regard it as presumptive evidence that its origin is the same, although I may not be able fully to understand its irregularities and vagaries in the different parts of its course. I have only one argument more to offer on this head, derived from the fact (if it is a fact) that one and the same woman, having only one kind of sore, may infect her lovers with sores of various and de-

cidedly different characters. Every one must at once perceive how the history of the troops in Portugal, as told by Mr. Ferguson, bears upon this subject, inasmuch as it is certain that the females who communicated a mild and trifling disease to their own countrymen, infected the British with the most frightfully destructive phagedenic ulcers: he speaks, for example, of an opera-dancer that spread ruin around her in every direction, yet suffered so little in her own person as not to have her professional avocations interfered with for a moment. Notwithstanding this and other similar facts, an opposite opinion very generally prevails, is held by most respectable authority, and sustained by that most fallacious of all proofs,—inoculation. Of course, therefore, I do not claim importance for the following anecdote, nor do I hope to convince a single sceptic by it; however, being myself convinced of its truth, I avail myself of it, leaving others to form their own estimate of its value:—Many years ago, while yet a student, several of my companions in College contracted the disease, and all attributed the infection to the one courtesan: they had ulcers of different characters, and one of them in particular had one of the worst phagedenic chancres I ever saw, which was treated with mercury by a gentleman who very shortly afterwards became a decided enemy to the mercurial system. This female, after having wrought such variety of mischief, became a patient of the late Mr. Hewson in the old Lock Hospital, where I had an opportunity of seeing and attending her. Through curiosity on the subject, as I was acquainted with so many of her victims, I suggested that she should be carefully examined, and the result proved (so far as anything connected with syphilis is susceptible of proof) the truth of the above position. I think I have since made out the same result in other instances, but never so clearly—never so impressively: it was one of the first and earliest observations I had ever made; and as no such doctrine as a plurality of poisons had then been thought of, it certainly was made without reference to the support of any theory whatever. If, then, this be true,—nay, if in a single instance I can discover a sore producing such effects, how can I regard that ulcer as containing within itself a variety of different poisons, to be scattered indiscriminately, and perchance among the individuals who may come within the sphere of its influence, bestowing on one a Hunterian chancre, on another a phagedenic, and on a third a sloughing sore; each of these to be subsequently followed by some eruption peculiar to itself? Thus it is that I cannot believe in a plurality of poisons; thus am I compelled to fall back on the doctrine of one poison

only; granting (for it may not be denied) that this poison produces a variety of sores; granting, also, if demanded (for it is now of no practical importance), that one syphilitic sore will frequently, although not uniformly, be followed by one particular eruption, or one form of sore throat; but maintaining that whatever ulcer is so followed derives its malignity from one and the same poison, contaminating the system in one and the same manner, and removable (as far as is known at present) only by the one medicine.

Having now examined, with all the candour and fairness of which I am capable, some of the most important features in the natural history of syphilis, objecting freely to opinions that seemed questionable, no matter by what authority sustained, and endeavouring to support my own views as far as possible by the experience and arguments of others,—I look back with astonishment at the small amount of progress that has been made, and at the mass of obscurity that still hangs over this seemingly devoted subject. In an early part of these essays I pointed attention to a law which had (as far as I know) hitherto escaped observation, that "the poison of syphilis never returned on itself, or re-contaminated the source from which it was derived;" and the effects of that law in invalidating all the conclusions supposed to be established by inoculation. I then attempted to explain certain results produced by the continuance or persistence of the poison, and its lying dormant within the individual for an unlimited space of time; and how every peculiarity or property of it seems designed to favour its extensive dissemination. I have now followed out the disease as it shows itself in a multitudinous diversity of forms, and have canvassed some of the causes that seem to modify its appearance, its progress, and its termination. I have examined the question of a plurality of poisons as productive of a number of actually different diseases; pointed out the possible effect of a renovation of the infection in occasionally introducing some black lion, or other fearfully aggravated form of disease, and acknowledged that it sometimes assumes a milder aspect, as if about gradually to wear itself out and disappear. So far I have endeavoured to point out, in the differences between syphilis and other blood diseases, some causes for the exceeding variety in the characters of its symptoms, yet still it is obvious that there is something more; something still remaining behind, more potential in operation than any of these or all; something needed to explain the wonderful difference in the time, and order, and manner of development of the various symptoms, and of which we are profoundly ignorant. Thus it has been

seen that syphilis may lurk for years in one individual, never exhibiting a single symptom, never occasioning so much inconvenience as to arouse suspicion, until the mischief is discovered by the unexpected appearance of an infected offspring. Contrast this with the fearfully destructive and rapid progress of the disease in others, sore following sore, and symptom succeeding symptom, until the entire body has become apparently a mass of filth and rottenness. We too frequently see cases in which, from the first appearance of the chancre, the patient has never been one moment free; eruptions, sore throat, iritis, swelled testicle, nodes and caries, rupia and ulcerations following each other with unceasing rapidity until he sinks under his sufferings, and dies one of the most pitiable objects in the creation. The latter of these is confessedly a case of syphilis, without any possibility of doubt or error; so is the former, unless it be asserted that the birth of a pocky child is no proof of the existence of the disease in the parent. They are both specimens of the one disease,—the products of one poison,—why does this poison lie dormant and at rest in some, whilst it occasions the most unremitting and dreadful sufferings in others? In all classes of the community,—in apparently all kinds of constitutions and temperaments,—in persons of every habit and pursuit of life,—this unaccountable diversity is observed. I have already stated that I cannot trace any differences in the original infection, and therefore must refer it to some peculiar state or condition of the individual; I must say that it depends on his constitution. Now, after all, how very little of real or available information is gained by this method of dealing with the subject! We know that the course and progress of the disease may exhibit the greatest possible variety; that, once a chancre has healed, no one can tell whether it will be followed within a week by a sore throat, or an eruption, or whether the patient will remain to all appearance sound and healthy, until (it may be) in years afterwards he infects a wife and child; and we say that this variety is determined by the constitution, but of the peculiarity of that constitution we are utterly and profoundly ignorant. Still we are, in this respect, not much worse off in dealing with syphilis than with many other affections. Out of fifty patients, the subjects of operation, we know not the few that may be attacked by erysipelas; out of a number wounded we cannot point out the one or two that may subsequently die of tetanus; we can neither prevent the occurrence, nor explain it when it has happened, otherwise than by reference to the constitution. This, then, of which confessedly so little is known, seems to be the great, the prevailing influence

in determining the progress of syphilis, and perhaps in forming its characters of severity or mildness. How diffident should it make us in advancing or asserting a positive opinion, and how candid and forbearing in examining the views of others.

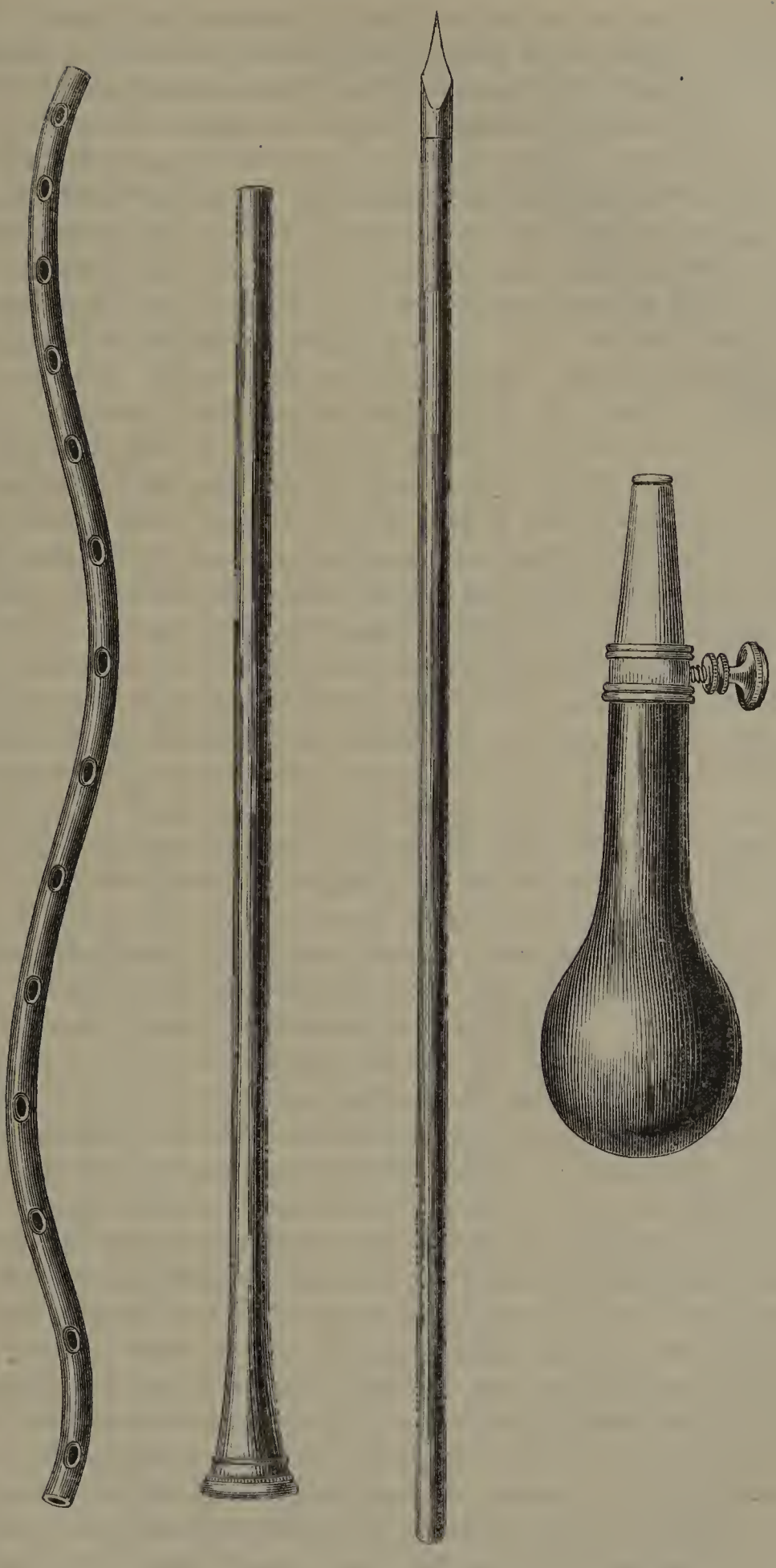
Art. XII.—*Observations on the Treatment of Acute and Chronic Abscess by the Method of "Drainage Tubes."* By T. Hawkesworth Ledwich, F. R. C. S. I., M. R. I. A.; Lecturer on Surgical Anatomy in the Original School of Medicine, Dublin; and Member of the Surgical and Pathological Societies of Ireland.

The diseases which engross the greater part of the attention of the surgeon, both in hospital and private practice, are essentially inflammatory in their nature, being generally attended at some stage of their progress with that modification of the hyperæmic condition termed "suppuration," or the formation of abscess of a circumscribed or diffused character in the areolar tissue of certain organs or parts of the human body. But whether they present themselves in the acute and sthenic form, or as the results of asthenic accumulation, the objects of surgical interference remain invariable, based on the same principles, and tending in their details towards the attainment of a similar ultimate effect. The indications to be fulfilled in the treatment of abscess are—first, to give exit to the abnormal fluid; secondly, to avoid its re-accumulation; and thirdly, to promote contraction of the pyogenic cyst, with adhesion of its walls, and consequent obliteration of the cavity: these several objects being attained with a degree of rapidity consistent with safety, and an immunity from the effects of those unfortunate accidents arising from artificial communication, created by the exigencies of surgery, in extensive purulent depôts. These indications seem to be fulfilled with so much safety and simplicity by the "drainage system" of treatment invented by M. Chassaignac, that I do not hesitate in bringing the details of the process before the profession, in order that a more extensive field for its operations may be attained, and an impartial investigation of its merits lead to its more general adoption as a curative agent in the treatment of abscess; and it may occur that the Irish school of surgery, maintaining its deserved practical character, shall further modify and improve a process which has already received the sanction of many eminent surgeons of the Continental hospitals.

In order to perform the cure of abscesses by drainage, the

following instruments are necessary for the purpose, which will become easily intelligible by reference to the woodcut, as it is a faithful representation of their outline, they being delineated of something more than half of their natural size. The canula and trocar, B, C, are about ten inches long; the shaft C, is movable in the handle D, one extremity being sharp, like an ordinary trocar, the opposite, blunt and rounded. The former is calculated to make an easy entrance into a cavity, whilst the latter performs the functions of an exploratory probe; lastly, a portion of caoutchouc tubing A, somewhat smaller in caliber than the canula, with a number of minute lateral perforations, completes the apparatus. Its use may be thus briefly described. The sheathed trocar is cautiously plunged into the abscess, and then a counter puncture is made from within, at some distance from the first point of entrance; the trocar is now removed, and a portion of tubing is passed through its canal; the ends projecting from the openings are tied together, and light dressing alone is necessary in the further progress of the case. If the abscess is large, a second pair of openings should be made, and an additional tube introduced through the cavity. The surgeon may be averse to puncture the skin; and if such should be the case, a small incision through the integument only will facilitate the entrance of the trocar into the abscess. The tubes should be allowed to remain without interference until all pain subsides, the discharge diminishes, and the cavity becomes small and solid, with inversion of the margins of the tube apertures. Such is the operation: being sufficiently simple in its performance to satisfy the most timid operator, and so free from any disagreeable results as to diffuse inflammation or sloughing, that, from my own observation of its effects, I can affirm the most fastidious practitioner of conscientious surgery may fearlessly adopt its universal application in the treatment of purulent collections in all the external regions of the body.

The cases in which its use would seem specially applicable next demand a brief consideration; but this proposition opens up such an extensive field for examination, that instead of going fully into the history of abscess, and the general details of suppuration, I can only direct attention to the salient features which render the system of "drainage" novel in its principles, feeling confident that the clinical observation to which it will be subjected must bring the minor details associated with the plan more permanently before the educated eye of the hospital surgeon than could possibly be accomplished by the most copious description.



A B C D

To produce an acute or sthenic abscess, the vessels of the particular tissue must pass through their morbid alterations, both as to their structure and contents, so as to permit of the escape of a certain amount of liquor sanguinis into the inter-vascular spaces; if this process occurs slowly, and the effusion is within certain limits as to quantity, excess of tissue ensues; but if greater rapidity is observed, and a larger amount of plasma escapes than can be assimilated into the surrounding tissues, then a new product, *pus*, is formed, contained within an artifical cavity, lined by a pyogenic membrane, composed of solidified plasma, and this surface determines, if it does not absolutely cause, the formation of purulent matter. Now, whilst the pus remains within the abscess, it becomes itself an obvious source of morbid action, by causing an irregular distribution of the blood to the minute tissues, and accelerating nutrition beyond its normal standard, and new products allied to, but not identical with tissue bases, are formed, with the physical characters of pus. That purulent matter, in its organic elementary constitution, bears a close resemblance to structural blastema, is indisputable, from an examination of its contents; here there are nucleated cells, fibrinous corpuscles, and a fluid containing, in solution, pyin, possessing many specialties, associating it organically with albumen, or even fibrin; the recollection of these facts will hereafter explain some of the peculiar advantages of "drainage." To relieve such a purulent collection an incision is made into the cavity: the rapid evacuation of the matter ensues; and the internal distending force being removed from the surface of the cyst, an augmented quantity of blood is determined to its tissue,—a circumstance which accounts for the fact that, immediately after the operation of evacuation, the amount of secretion is, as a general rule, increased in quantity; but this immediate effusion is very different from mature purulent matter, as the following experiment will illustrate:—I punctured a small abscess on the forehead, and forcibly expressed its contents; in six minutes it became again nearly of its former magnitude, with well-marked fluctuation; having introduced a grooved needle into the former aperture, a clear fluid escaped, and a drop having been placed on an object-glass, it fibrillated and became granular, just as liquor sanguinis is wont to do, but there was not a trace of pus; I opened it again in six hours, and purulent fluid constituted the contents. In fact the plasma only required the lapse of sufficient time to cause its transformation into pus, and convert what might rest at the stage of adhesion into the advanced process of suppuration.

In adopting the cure by "drainage," the surgeon will observe the application of the foregoing remarks, especially after attention has been directed to the immediate advantages accruing from the process in the restoration of parts to their normal condition:—

Firstly. By the introduction of the tubing the purulent matter escapes slowly; influenced by the natural resiliency of the surrounding parts, and by its gradual emission, sudden congestion of the cyst is prevented, as the process of natural opening is simulated exactly.

Secondly. It prevents accumulation of blood "plasma," and thus favours the conversion of moderate effusion into structural deposit.

Thirdly. It has a tendency to retain all the solid elements of the matter, thus promoting occlusion of the cavity.

Fourthly. It favours the production of normal action, particularly in connexion with diseased bone structure; and whilst it accelerates the exfoliation of disintegrated portions, it limits the excess of nutritive activity, promoting healthy deposit of reparative material.

Fifthly. It altogether prevents destructive inflammation of abscess cysts.

Having detailed systematically the general indications fulfilled by "drainage," the several special affections that are calculated to be benefited by its operation will form the next subject for consideration: and in treating this particular branch of the subject I must beg indulgence for the unavoidable imperfections entailed by the casual reference to many important diseases, each of itself being sufficient to form the text of a separate essay; let the fact, therefore, be borne in mind, that my remarks are only illustrative, never specially descriptive. Acute mammary abscesses, whether subcutaneous, glandular, or tubular, yield with the greatest rapidity to the plan, if properly carried out; and I have not seen either sinuses or re-accumulations supervene on its practice, as frequently occur where patients are subjected to the ordinary incision; nor is the successful issue of the case influenced by the puerperal condition of the patient, as these cases seem especially amenable to its curative agency. In that deep abscess forming beneath the mammary gland, attended with subacute symptoms, where a tedious form of suppuration supervenes eventuating in exfoliation of the ribs, the introduction of double tubing creates so great a change in the space of a few days, that I have almost failed to recognise the patient after a short absence. Again, in the subfascial abscess of the neck, whether idiopathic or occurring in connexion with

fever, the passage of a single drainage tube often prevents the danger of immediate suffocation, induced by accumulated matter pressing on the trachea. In such a case I witnessed the immediate utility of the practice. The whole right side of the face was enlarged, and the neck swollen to such an extent that the cervical region formed a plane surface with the clavicle and jaw-bone; there were great dyspnœa, and occasional spasms of the glottis, which threatened momentarily to close the patient's career. An opening was made cautiously beneath the ramus of the jaw, and the probed extremity of the trocar passed downwards to the supra-sternal space; the canula being now retained, the trocar was reversed, and a counter-opening formed, through which a portion of tubing was passed, and the surface lightly covered; a continual draining of matter and serum ensued, and in forty-eight hours nearly the whole swelling had subsided, and the neck returned to its normal proportions. Not only did the tube give exit to the confined pus, but it also formed a useful conduit for the escape of the effused serum, which formed no inconsiderable portion of the swelling.

Acute abscess occurring in the ischio-rectal fossa rarely terminates without the eventual formation of fistula, and so frequently does this accident ensue, that it has been seriously proposed, if not actually practised, to divide the sphincter ani when the abscess is being opened. All this inconvenience may be avoided by tubing and slow drainage, which favour gradual evacuation, and thus allow the cavity to diminish by the spontaneous return of the levator ani and contents of the fossa to their normal position and relative situations. It might seem a source of inconvenience to the patient to endure the persistence of the tube, but the irritation caused by its presence is trivial and temporary in its nature, whilst the avoidance of a disgusting alternative amply compensates for the slight amount of suffering entailed by the foreign body.

The acute syphilitic bubo, of a conical form, red, tense, and shining on the surface, which suppurates rapidly, yields almost immediately under the influence of drainage; but it is in the second form of specific abscess, occurring in the groin, that its great advantage is demonstrative as a curative agent in combating a tedious if not a formidable affection. This bubo appears somewhat late in the progress of chancrous ulceration, in persons of a lymphatic temperament. At first its progress, as well as its invasion, is insidious: painless and without discoloration of the surface, after some time it becomes hard, elevated, and oval, the long measurement being in the direction

of Poupart's ligament; pain now supervenes, whilst the skin on its surface becomes dusky, thin, and livid; still, the progress is slow commensurate with the languid character of the inflammatory process; finally, matter forming undermines the skin extensively, and the whole tegumentary covering merges on the confines of disorganization. If it is allowed to open spontaneously, or if evacuated by a simple incision, pendulous flaps of dying skin lie indolently within the deep cavity of the abscess, and these must be removed, or ulcerate, before the process of repair will take place, which may occupy months for its completion. The only attempt at improvement in the treatment of those affections has been limited to the use of potassa fusa, to open the cavity, as a substitute for the knife, but the amount of benefit derived from the change is more than problematical in the majority of cases, and in some instances has been productive of absolute injury to the patient, by further increasing the disorganization by its violent operation.

In the year 1852 I first endeavoured to devise some means by which disorganization might be averted, and the long confinement necessary for repair obviated, and at least in a minor degree I was successful, by adopting the following palliative method, founded on the supposition that the presence of the morbid product making pressure from within was, in some measure, the source of disorganization. A grooved needle was passed at some distance through the healthy skin into the cavity, and the sanious contents cautiously evacuated every second day. After the fourth repetition of the puncture, the skin, which was previously dusky, returned to its natural colour, and the case subsided without any external opening. Since that period I have followed this plan in every case with benefit, but certainly not with the same fortunate result as in the first experimental puncture; but if the cause of the destruction of the integument is really the result of pressure on parts already tainted by the influence of a specific poison, then the fine drainage tube is certainly indicated, and if utility is to be measured by successful results, the system will invariably be followed by every surgeon who wishes to relieve his patient "quickly, safely, and with trivial suffering."

Although few surgeons can congratulate themselves on the successful issue of cases of psoas abscess, when treated according to existing opinions, still there are some exceptional examples, which, differing pathologically from the ordinary variety, present a more favourable termination. The following cases will illustrate acute phlegmonous psoas abscess, and their probable course and termination.

A lady fell backwards over a small rock, across which her lumbar regions were violently extended. For a few days subsequently she complained of slight stiffness on the right side, in the course of the psoas muscle, but higher than ordinary in such cases. After some time, pain, with fulness of the right hypochondrium, set in, with well-marked fever, and clay-coloured tinging of the skin. An affection of the liver, and even abscess of that viscus, were suspected, and the treatment usual in such cases was pursued accordingly, but without any abatement of the malady. On the eighteenth day, counting from the period of injury, a tumour for the first time appeared in the groin, possessing well-marked fluctuation. A free incision gave exit to one pint and a half of healthy pus, to the great relief of the patient. However, profuse suppuration now set in, with hectic fever, and a slow recovery resulted, after an illness of six months.

In this case every circumstance pointed to the characteristics of pure phlegmon:—

Firstly, it arose from injury; secondly, the pus was healthy, always free from fetor or blood; and thirdly, the result was different from scrofulous disease in general. I have at present another case of a similar nature under immediate observation, in which acute inflammation of the psoas followed severe exercise, and although the progress of the case was slow under ordinary treatment, still, a complete recovery followed suppuration, and the patient now, years having elapsed, presents a deep pit or umbilicus in the groin as the only trace of his former complaint. Here "drainage" will obviously prove of immense advantage, converting a tedious, and often dangerous process, into a rapid and permanent reparative action.

The second and more frequent aspect of psoas abscess is manifested in children as the concomitant of spinal disease. Essentially scrofulous in its character, a slight injury is sufficient to call into active operation a disease that might have remained latent, under favourable circumstances, for a long period. Now whilst it is sufficiently evident that many of such cases have their source in disease of the bones, ligaments, or discs of the spine, still the universal association of psoas abscess with spinal caries admits of doubt, and a close analysis of the exact progress of the symptoms is sufficient to divorce a connexion based rather on authority than founded on just pathological principles,—an assertion that will appear not altogether devoid of justice when the subject receives a detailed illustration. In one *class* of cases the early symptoms are languor, lassitude, aversion to mount an acclivity or descend a stair, difficulty in perfect ex-

tension of the thigh, fulness in one lumbar region, with a possible swelling in the groin, indicating an advanced stage of psoas abscess. Now although the child may not have presented a single symptom of spinal affection at any period during the progress of the disease, still, because the patient is scrofulous, caries of the vertebræ is anticipated with certainty, substituting a conjectural idea for pathological reality. Again, the abscess having appeared and arrived at its full fruition, is opened, spinal symptoms supervene, and from hectic, or probably inflammation of the cyst, the child dies; a post-mortem examination reveals a small patch of caries with thickening of the surrounding ligaments, and this trivial point of disease is grasped at by the hand of prejudice and triumphantly exhibited as the "origo mali," or starting-point in causation of an enormous abscess: yet what a disparity exists between cause and effect in such examples—*a disparity* sufficient, and more than sufficient, to lead a reflective surgeon to doubt the universal relation of the two affections. Let it not be imagined that I would attempt to deny the connexion of caries and psoas abscess in particular cases, but, from the observation of numerous cases and the examination of several specimens, both here and on the Continent, I am led to doubt, and not unreasonably, that dogma of assumed experience, which would place the cure of psoas abscess without the aid of surgical science because the vertebræ must be diseased "at the bottom of the abscess;" and I will venture to place my reasons for arriving at this conclusion in a systematic form, trusting that surgeons will unprejudicedly examine these statements prior to forming determinate opinions on the subject. That psoas abscess is invariably the result of spinal caries is opposed by the following acknowledged facts in the history of that particular affection, and others of a similar nature:—Firstly, the symptoms of abscess often precede the spinal, and the latter may never become manifest; whilst where caries is absolutely the cause of suppuration, symptoms referrible to the spine are primary, the abscess being secondary. Secondly, there is often a great disparity between the amount of caries and the extent of the abscess. Thirdly, experience has proved that phlegmonous inflammation of the psoas, resulting in abscess, may be wholly confined to the muscle, and never proceeds to spinal disease. Fourthly, from our knowledge of the progress of similar collections, the fact may be reasonably inferred, that the abscess may be the cause of the caries, instead of the caries being the cause of the abscess, and this is susceptible of demonstration. Thus scrofulous deposits form in almost every region of the body, irrespective of diseased bone, and in

numerous cases diseased bone may be traced to the abscess, as its source. This appears frequently in chronic deep-seated mammary abscess, in the progress of which caries of the ribs is no uncommon complication; and this latter might just as fairly be esteemed the cause of the abscess as diseased vertebræ of the psoas collection. Fifthly, the cause of death in psoas abscess rarely can be referred to the spine, as it usually results from hectic, or inflammation of the cyst.

If, then, these reasons are sufficient to prove that the abscess may be primary, if they remove the question beyond conjecture, and place it within the limits of just reasoning from substantial facts, it is then no longer a subject of caprice or fashion as to the early evacuation of such collections, but one of the most vital importance to the patient, that a progressive malady, fraught with an amount of danger scarcely to be exaggerated, should be treated energetically in its earlier stages. But, supposing the bones are diseased, and that deep-seated disorganization is the obvious cause of the abscess, will the delay augment the patient's chances of recovery? I cannot conceive the reasons for such practice, that would leave a mass of purulent fluid to dissect and distend the long track of the psoas sheath, after it has pointed in the groin: every argument favours early evacuation according to the following rules:—If the bones are intact, or even if the evidence of their disease admits of doubt, open early; and further, should the bones be obviously carious, still evacuate the abscess, and the following advantages will be achieved:—The prevention of those evidences of constitutional disturbance due to over-distention of the cyst, together with the avoidance of any further increase in magnitude; and again, an outlet is obtained for the product of diseased action, which experience has taught me is of no mean importance in favouring the repair of abscesses complicated with carious bones. But surgeons have ever displayed an invincible repugnancy to any operative interference with psoas abscess; and the unfortunate results following incisions, caustics, setons, punctures, &c., in the treatment of these cases, seemed to justify the disinclination to adopt active treatment; in fact, every effort was made use of to exclude, during the operation, atmospheric air, as the inflammation of the cyst, which so frequently follows, was solely attributed to the noxious influence of air inducing disorganizing inflammation of the abscess, with its accompanying train of miseries and invariable fatality. Still that all this theory of causation is purely hypothetical, is clearly proved by a review of the several facts that are admitted by pathologists in relation to this formidable accident. It would be an

unwarrantable infliction on the profession did I venture to describe the symptoms and progress of a generic case of cyst inflammation; all these are, unfortunately, too familiar realities to require the tinted copy of the artist to renew the living picture of suffering that meets the surgeon but too frequently, in the wards of our large hospitals. I prefer contemplating the subject in that aspect only, illustrating the modification of treatment which experience leads me to enforce.

Inflammation of the cyst of chronic abscess is not produced by the admission of atmospheric air into the cavity. This proposition is rendered evident by the following facts:—When cervical abscess follows caries of the cartilages of the larynx, and an ulcerated opening creates a communication between the purulent collection and the air-passages, still there is no inflammation of the cyst. Again, a pulmonary vomica goes on increasing, until at last it communicates with a bronchial tube, a perfectly free current of air entering the cavity, but without the production of cyst disease. In pneumothorax the symptoms which supervene on the perforation of the pleura, the cavity of which becomes, to all intents, similar to a pyogenic surface, differ considerably from those attending inflamed cyst, whilst they should be of a similar character if the access of air was their common cause. In lumbar abscess inflammation of the cyst rarely supervenes on opening, even by a direct incision; and finally, the total absence of this accident, when the abscess is allowed to open spontaneously, indicates that this peculiar affection must be referrible to some cause differing from the circumstance to which, by common consent, it seems to be attributed by the most eminent authorities on practical surgery. To me the fact appears manifest, that to the mode of evacuation alone is due the production of this formidable disease; and my views of the subject will become intelligible by the examination of the morbid anatomy of the abscess. The psoas, from its points of origin to its insertion below the lesser trochanter of the femur, is uniformly surrounded by a dense fibrous envelope, which closely invests the substance of the muscle when, an abscess is fully formed in this locality; the muscular structure, at first unravelled, finally yields to the process of disintegration, until every trace of the original psoas disappears, whilst the sheath becomes thickened to the extent of half-an-inch, and lined by a soft villous cyst in close approximation, if not absolutely connected with a red vascular network, which forms the organic supply of the cyst yielding the material for purulent evolution. Imagine this cavity in a state of unvarying distention, the whole surface of the cyst subjected to a system of uniform

pressure from the contained secretion, and then conceive that at a moment the surgeon incises the tumour, and distention ceases suddenly; this pressure which regulated the vascular supply is removed by the violent evacuation of the matter, and the blood rushes towards the unsupported cyst, gorging the tissues, already debilitated by chronic disease. Should the surgeon have recourse to violent pressure to expedite evacuation, then the morbid change I have endeavoured to illustrate becomes a matter of greater probability, even amounting to certainty of occurrence. Now, there is a temporary vacillation as to the future progress of the case, marked by a cessation of secretion, for a period influenced in its length by the severity of the congestion which has supervened, and this excess of blood supply may subside by profuse suppuration, or may result in the more formidable specialty of inflammation of the cyst of the abscess. By "drainage," a slow but certain evacuation of the matter is insured, simulating exactly in its operation the effects of spontaneous ulceration, just so much of the purulent fluid escaping as directly corresponds with the collapse of the cyst, and the restoration of the surrounding parts to their normal position; and if this special mode of treatment was only applicable to the single case of psoas abscess, still its discovery would be an incalculable boon to the afflicted, and one calculated to enlarge the domain of surgical utility.

I have already alluded to the advantages derived from tubing in abscesses associated with diseased bone in various parts of the body, and venture to adduce one or two examples illustrating its curative tendency. An aged man suffered from abscesses over the sternum and left side, with sinuous apertures overlying carious bones; the usual concomitant hectic was also present in an aggravated form. After the introduction of tubing, repair set in with the greatest rapidity, with the extrusion of small osseous scales, which, under the old plans of treatment, would have remained for an indefinite period in a semi-detached condition. Again, a young man had suffered for five months from abscess around the shoulder-joint. Its motions were impaired with extensive swelling beneath the deltoid muscle, extending into the axilla; there was severe pain on the slightest motion, whether active or passive in its character, and a large sinus corresponded to the fissure between the great pectoral and deltoid muscles. The blunt extremity of the trocar, passed down through the fistula, revealed denuded bone in the site of the surgical neck of the humerus; it was now carried backwards, and made prominent behind, the canula being retained in its situation, the trocar was reversed, and a counter-opening thus

obtained; a single tube was subsequently introduced, and light dressing applied. For the first two days the suppuration was augmented, but from that period the swelling gradually subsided, and in nine days, when I ceased to observe the case, there was scarcely anything abnormal about the joint except the sinuses in the site of the tubes; all pain and even stiffness had disappeared, the patient expressing his gratification at the unlooked-for change, which seemed in this case to arise from the free outlet for secretion permitting the soft parts to approach the denuded bone, and thus to act as a substitute for the destroyed periosteum, conveying direct nutrition to the osseous surface. In cases where paronychia extends into the palmar region and up the forearm, dissecting the parts by diffuse suppuration, the introduction of several tubes creates the most marvellous benefits, by giving exit to the matter, and averting that pressure on the vessels which eventuates in the disorganization of the extreme structures; but I would not advocate the practice in the early stage of such affections, as it is only where purulent disorganization is excessive that the treatment becomes surgically applicable. Chronic bursitis yields readily to tubing, after the ordinary plans have failed to produce a cure; I have seen its practice in a number of the most unpromising cases attended with invariable success, and never productive of the slightest danger to the patient, and I look upon drainage as one of the safest and surest methods in the hands of the surgeon to solidify these chronic affections.

The further illustration of this particular mode of treatment, and its adaptation to special examples of disease, as hydrocele, necrosis, hepatic abscess, &c., would unnecessarily prolong this abstract, without conducing to any practical advantage or scientific object, as I conceive that sufficient evidence has been brought forward to induce the hospital surgeons of the Irish school, yielding to their practical tendencies, to adopt improvements, from whatever source they may originate, and to give a fair and impartial trial to the cure by drainage; whilst I have no doubt but that their unprejudiced testimony will still further enhance the deserved reputation of M. Chassaignac, a reputation founded not only on his character as a skilful and bold operator on the living, but also based on the higher mental qualifications which have placed him amongst the medical philosophers of France.

Art. XIII.—*On Anteflexion of the Uterus considered as a Normal Anatomical Condition*[a]. By J. Henry Bennet, M. D., Physician-Accoucheur to the Royal Free Hospital, London, &c.

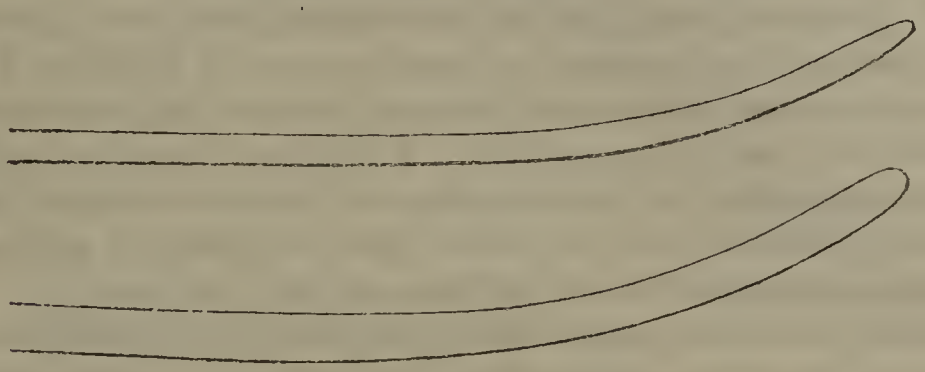
In the course of a series of investigations, undertaken some years ago, in order to ascertain the condition of the os uteri internum during life, I became aware that the uterine cavities, and the uterus itself, in women who have had no children, are generally more or less anteflexed, instead of straight, as universally described by anatomists.

That the uterus and uterine cavities have hitherto been considered to represent a straight, and not a curved, canal by pathologists, as well as by anatomists, is shown by the fact that the dilators and stem pessaries proposed and employed by M. Velpeau, Dr. Simpson, M. Valleix, and others, have invariably been made perfectly straight, under the impression, evidently, that they were thus adapted to the natural direction of the uterus. It is also proved by the fact that anteflexion of the uterus has universally been described as an abnormal and morbid condition. I must, however, except M. Huguier, the French surgeon, who published, a few years ago, a memoir in the "Bulletin de Thérapeutique," in which he described, as congenital conditions, various derivations from the normal standard of the uterus,—anteflexion amongst the rest. These congenital deviations, however, he described as accidental and exceptional.

My own researches were at first carried on merely with the view to determine the real value and importance of contraction of the os internum during life as a cause of sterility, Dr. Simpson, of Edinburgh, having forcibly drawn my attention, and that of the profession generally, to this question. I then found that in many cases where the uterine sound meets with resistance at the os internum, a small wax or elastic bougie passes with ease into the uterine cavity. I also found that when the woman has had no family, the bougie, if allowed to remain a minute or two in situ, all but constantly presents, on its withdrawal, a slight anterior curve; that is, a curve the concavity of which is turned towards the pubis. This curvature is evidently the reproduction of that which the uterine cavities and uterus present naturally. In some women child-bearing does not efface it, and it is still met with after one or more parturitions. The wax or gum-elastic bougie, on

[a] Read before the London Medico-Chirurgical Society, June 23, 1857.

hardening, retains the curve. It varies in different individuals within rather wide limits; but is generally no greater than is indicated in the accompanying woodcut; in some exceptional



cases, however, the curve is very much greater. It is not occasioned by the pressure of the bladder at the time of examination, as all due precautions were taken to prevent this cause of error; although this may possibly be the original cause of its existence.

The anteflexed state of the uterus is scarcely recognisable, under ordinary circumstances, by a digital examination, but, when decided, it is easily perceived. In the extreme and exceptional cases the anteflexion may be so great as to give the uterus the form of a crescent, the anteflexed fundus being turned towards the pubis. This natural anteflexion of the uterus is, no doubt, often rendered more evident to a digital examination by the physiological results of sexual congress, which tend to throw the cervix backwards towards the sacrum, and, secondarily, to antevert the body of the uterus.

The axis of the unimpregnated healthy uterus is generally considered to be that of the upper pelvic outlet; but if the anterior curvature now described is admitted, the axis of the upper portion of the uterus would not exactly correspond to that of the upper region of the pelvic cavity, but be rather anterior to it.

In the year 1853, a young French surgeon, M. Boullard, Prosector to the Paris Anatomical Schools, presented a thesis to the Faculty of Medicine, with which I have recently become acquainted. In this thesis M. Boullard has given the history of a series of researches, principally made on the dead, which fully corroborate the results that I have arrived at from the examination of the living. According to M. Boullard, also, anteflexion is the natural anatomical direction of the uterus,—that organ not being straight, as represented and described, but more or less curved, like a retort, with the conca-

vity anterior. M. Boullard finds this anteflexion or anterior curvature of the uterus is most marked in the fœtus, less so in the child, least in the adult; and that it ceases to be perceptible in most women who have borne children.

M. Boullard has given in his thesis sketches of the state of the uterus at the above-mentioned epochs of life, but I consider that he has rather exaggerated the anteflexion, especially in the fœtus and young child. I believe, however, with the French surgeon, that the anteflexion is more marked at these periods of female existence than later, although I am scarcely prepared to admit it to be as great as he represents it.

The fact of the uterus being normally anteflexed is not a mere sterile anatomical correction. It has a most direct and important bearing on the pathology and therapeutics of some forms of uterine disease. Thus, in the absence of all uterine mischief, anteflexion of the uterus, existing naturally and congenitally, may be accidentally recognised, and may be treated, most irrationally, as a morbid state. This is more especially likely to be the case if the uterus has been enlarged by acute or chronic inflammation, the anteflexion being of course rendered more evident by the inflammatory enlargement. The symptoms, in reality, occasioned by metritis, are in such a case attributed to the supposed morbid anteflexion; and if the practitioner is under the influence of the mechanical school of treatment, mechanical means for straightening the uterus are most erroneously, and often most injuriously, resorted to. I have seen patients, under such circumstances, martyrized for months, even years, by all kinds of mechanical contrivances, employed to straighten a uterus congenitally and naturally anteflexed.

I need scarcely add, that in cases of this description there is really nothing at all to be done but to reduce the inflammatory disease of the uterus, which exaggerates the (in reality) normal anteflexion, by increasing the bulk of the organ. As the latter becomes smaller and more natural in size, the anteflexion becomes less marked, but never disappears, for it is a natural condition.

I have not observed that the menstrual functions are interfered with by the existence of more than usually marked anteflexion, nor do I believe that females who present it are more likely to be sterile than others. In a few cases in which I have found the anteflexion to be carried so far as for the fundus and cervix to constitute a half circle, I have known the menstrual functions to be irregular and feeble; in these patients

however, it has appeared to me that the anteflexion was so exaggerated as to constitute a positive malformation; moreover, the vital powers generally were much below par. In several of these cases the most irrational efforts had long been made to restore to an imaginary standard of straightness the naturally incurvated uterus, under the erroneous impression that the curvature was morbid, and the cause of the constitutional debility.

Lastly, from the above facts may be deduced the practical surgical conclusion, that any sound or bougie, intended to explore or dilate the uterine cavities in a female who has not borne children, ought to present a curvature similar in degree to that which the natural cavities present.

ART. XIV.—*Cases of Aneurism of the Popliteal Artery cured by Compression.* By R. R. GELSTON, L. R. C. S. I., Surgeon to the County Limerick Infirmary, &c. &c.; THOMAS H. BABINGTON, M. B., F. and L. R. C. S. I., Surgeon to the County Infirmary, Londonderry; and RICHARD SARGINT, M. B., L. R. C. S. I., Clonmel.

1.—CASE OF ANEURISM OF POPLITEAL ARTERY CURED BY COMPRESSION, BY DR. GELSTON.

JOHN CONNELL, aged 30, admitted into the County of Limerick Infirmary, Tuesday, June 23, 1857. Is a married man, by trade a scaffold-maker; he states that up to three months ago he always enjoyed good health, but about that period complained of some general uneasiness in his left leg, which gradually increased, and for the last eight weeks the leg commenced to swell; still he continued at his work until the 19th of this month, when he had to give it up, finding his leg powerless, and unable to be flexed on his thigh; that morning for the first time he discovered a swelling in his ham.

He had venereal about five years ago, but did not take mercury; and otherwise has always been a regular and temperate person; his appearance, although not sickly, indicates a want of power; he seems easily excited and nervous; he walks with a lame step, requiring the aid of a stick.

Upon examination I found the left popliteal space occupied to the extent of from $2\frac{1}{2}$ to 3 inches in length, by 2 inches in breadth, by an evidently pulsating tumour, the expansion of which is felt latterly between the hamstring tendons; the pulsation is detectible by the eye, and pressure made upon the femoral artery in the groin empties the sac, and, if withdrawn,

it rapidly fills again; slight fremissement is felt by placing the hand gently over the tumour, but to such an extent is it discovered along the entire course of the vessel up to Poupart's ligament, as almost to lead one to dread that the internal coat of the artery must be roughened. It requires more than ordinary pressure upon the artery, even against the ramus of the pubis, before the pulsation can be entirely obliterated in the ham. This knee measures 15½ inches in circumference, the other one only 13½; there is a loud bruit de soufflet audible with the stethoscope. The whole leg is œdematous to a much greater extent than I have ever seen in an aneurism of its size, which is about that of a large hen-egg. The limb is of a white colour, and the superficial veins of it, as well as the thigh, are very turgid. I failed in detecting the articular arteries about the knee, as also the posterior tibial, but could feel the anterior tibial upon the dorsum of the foot feebly pulsating. Pulse 75; urine healthy; heart's sounds quite normal; skin cool; tongue clean; bowels confined. The glands in both groins are very much enlarged, more so than I have before seen where there was no evidence of scrofula.

Ordered a saline purgative, and to have the limb elevated upon pillows, so as to facilitate the return of the venous blood.

June 24th. Bowels moved; slept badly; pulse weak; evidently influenced by the alvine evacuation. Ordered five grains of saccharated iron, one grain of blue pill, and two grains of aromatic powder, thrice a day.

25th. This morning I received a note from Dr. Carte, to whom I wrote relative to the case, wishing him to send an instrument possessing any new improvements. In his note he says,—"To tell you the truth, I never like to see much œdema in such cases, as it always interferes with the pressure;" and he advises the use of the compound powder of jalap so as to purge the patient briskly, and thus try and lessen the œdema, and to elevate the leg above the level of the pelvis. I, therefore, directed the resident medical gentleman, Dr. Hunt, to give him, if his bowels were not acted upon by bed-time, half a drachm of compound powder of jalap; this he got, and on the morning of the 26th I found him much debilitated, bowels actively purged; pulse 65; nervous irritability present, as he had no sleep, and he complained greatly of pain in the tumour, as well as in the entire leg. The internal articular artery plainly discernible this morning, with considerable lessening of the œdema. Ordered eight ounces of chicken-tea, and to have an anodyne at night of the liquor of morphia in an ounce of camphor mixture. I placed a 4 lb.-weight on the artery in Scarpa's space, which

exercised so little control over the pulsation in the tumour that I then tried a 7 lb.-weight, which lessened the pulsation, and produced an entire absence of pain in the aneurismal tumour and leg, but caused, after a time, great turgescence of the veins in the thigh; this, *however, was not the result of pressure applied above the profunda, where the vein is not in such close contact with the artery.* Complains much of thirst.

27th. Œdema still less; external articular and posterior tibial arteries easily discovered; slept tranquilly; bowels slightly moved; pulse 60; nervousness much lessened; he removed the weight from the groin, finding it inconvenienced him, and applied it to *the tumour* itself; the pressure here equally caused a discontinuance of the pain; this I did not permit, fearing mischief to the sac might ensue, but I applied a *clamp* as high in the groin as possible, and controlled the current of blood, to such an extent as to give the patient ease from pain. Anodyne to be continued.

I never felt anything so distinct as the fremissement along the entire course of the femoral artery; there is no bruit discoverable in the heart, nor is the like condition to be felt in any other of the arteries.

28th. Temperature of the leg is sensibly lower than the opposite one; this I should have observed before; the bulb of a thermometer being applied to the ham of the left or unsound limb, indicated 90°, while that of the other reached to 93°. He sleeps well, and on the whole is more comfortable, and has experienced less pain in the tumour and limb, although the œdema is much greater, but this I consider is produced by the patient himself, who now, understanding something as to the mode of cure, kept up an imprudent amount of pressure with the clamp; this I at once removed altogether, and ordered him half a drachm of compound powder of jalap; lessened his fluids as much as I could, and gave him ten ounces of mutton-chop, instead of his chicken-tea. His diet now consists of eight ounces of bread, two quarts of milk, one pint of stirabout, and the mutton-chop. The aneurism has increased in size since his admission by nearly an inch, around the knee now measuring 16 inches in circumference.

29th. Less œdema present in the leg; ordered a purgative saline mixture.

30th. Slept very badly; is irritable; pulse 100; complains much of pain in the tumour, which he represents as never becoming less; bowels moved; aneurismal tumour is increasing in its lateral boundaries, attended with evident pulsation, as if the tumour was becoming diffused. To have one scruple of

liquor of morphia and one scruple of chloroform in an ounce of camphor mixture at bed-time.

July 1st. Bowels moved; slept well; less irritable; pulse 90; aneurism measures the same as on the 28th (16 inches round the knee). On the 26th a 7 lb.-weight alone exercised control over the pulsation, but on this morning I considered that some less amount of pressure exercised as much controlling power, due to the purgation, as well as his less irritable state, and having had a good night's rest. The œdema still continues, notwithstanding every means, mechanical as well as constitutional, having been resorted to. Carte's compressor having arrived, I applied it this morning at ten minutes to 11 o'clock A.M., screwing up the compressor not to the extent of preventing the current of blood from being received into the sac, but only rendering it perceptible to the touch.

2nd. Compressor continued at intervals; the longest time without interruption was over one hour; this only in the middle of the thigh, but in the groin it could only be borne for fifteen minutes at a time, in consequence of the enlarged glands of this situation. Dr. Carte having visited Limerick on professional business, saw the patient last night, and approved of what had been done.

6th. Nothing important since the 2nd. This morning he seems to have some considerable constitutional disturbance, accompanied by increased pain around the knee-joint, evidently produced by the enlargement of the collateral circulation; pulse 102. He refused the anodyne last night, and consequently slept badly; bowels slightly moved. The compression continued more or less during the day, but at night it cannot be continued; around the knee measures exactly 16 inches; relaxing the pressure in the groin removes the great pain complained of about the knee. To have one grain of powdered opium at bed-time. As I was obliged to leave town, he was visited by Dr. Carte at 8 o'clock, and, finding him somewhat feverish, he ordered saline draughts.

7th. Slept well last night, and is much less irritable this morning; bowels well moved; pulse 100.

8th. Aneurism increased around the knee; now measures $16\frac{1}{2}$ inches; slept well; irritability much less.

10th. Pressure by no means well continued, and the lateral pulsation before observed now very evident, but the tumour feels more solid, from the deposit of fibrine in the sac; the most forcible pressure will not obliterate a slight pulsation felt along the posterior wall of the sac; this, however, we con-

sider to be produced by an enlarged cutaneous vessel running in this situation. Ordered to take early in the morning half a drachm of compound powder of jalap. At my visit this evening, at 8½ o'clock, I found him apparently suffering the most excruciating pain all round the knee-joint; pulse 120; greatly excited, and most desirous of getting rid of the compressor, and wished me at once to resort to deligation of the artery; ordered him three grains of powdered opium in pill, and to omit the instrument for a few hours.

11th. Had no sleep last night, but in other respects is much more tranquil. Bowels well moved; bears the compressor somewhat better, but the moment that the current of blood is permitted into the sac the pain in the aneurismal tumour becomes perfectly insupportable, so much so as to require more than two men to keep him in bed. To have this evening two grains of powdered opium.

12th. Slept about three hours last night, and is very tranquil this morning; says he feels stronger. Had great pain in the sac occasionally during the day, which was greatly relieved by an evaporating lotion composed of equal parts of sulphuric æther and chloroform. Bowels not moved. To have early in the morning half a drachm of compound powder of jalap, and two grains of powdered opium at bed-time. At the evening visit, at 5 o'clock P.M., found him labouring under great pain about the knee-joint, and the aneurismal tumour seems much firmer and more circumscribed, owing entirely to the admirable way in which my son, Mr. T. Gelston, kept up the compression since 9 o'clock this morning. I visited him again this evening at half-past 8 o'clock, accompanied by Dr. Carte, when we found that all pulsation in the sac had ceased, and the patient was free from pain. To have his anodyne.

13th. All pulsation in the sac absent. Instrument removed for a short time, but applied again with a very moderate degree of pressure.

15th. Nothing new. The patient going on most satisfactorily; every particle of œdema has disappeared from the limb. The aneurismal tumour much more defined, measuring in its long axis 4½ inches, and in its width 3¼. All irritability has left him.

I do not think there was a continuous pressure of thirty-six hours kept up in this case; from its first application to the cure, it was never on for an entire hour at any one period, without being interrupted, and was off entirely during each night. Its unpromising features were many: œdema of leg and foot; en-

larged glands in the groin, attended with consequent difficulty of obliterating the pulsation, and which invariably returned after ten or fifteen minutes, either from the patient shifting, or from some abnormal condition of the vessel itself; the occurrence of lateral pulsation, the day preceding the application of Dr. Carte's compressor; very great fremissement all along the course of the femoral artery, to such an extent as to render the opinion of a diseased condition of the vessel the natural conclusion.

2. CASE OF ANEURISM OF POPLITEAL ARTERY CURED BY COMPRESSION, BY DR. BABINGTON.

Patrick M'Teague, aged 32, admitted into County Londonderry Infirmary, July 30, 1857. States he had been a post-boy for some years past; regular in his habits; but suffered from repeated attacks of rheumatism, or rheumatic pains, which were relieved by exercise. About six months since he was seized with a violent pain in his right leg, accompanied by a peculiar pulsation in the popliteal space; this commenced at night, and kept him from sleep; he attributed the attack to rheumatism, and sought relief from exercise, and applied warm stupes to the part. About three weeks after, he felt a small tumour, about the size of a bean, in the right ham, attended with continued pain and loss of sleep. The tumour enlarged gradually, and the pulsation became stronger, was accompanied by more pain in the leg, and constant want of sleep. His sufferings having so increased, he applied for medical aid and was advised to come to hospital.

There was a pulsating tumour in the popliteal space along the line of the artery, about the size of a turkey's egg, flattened; the principal bulk of the tumour was to the outside of the ham, but the whole popliteal space was nearly filled up. It was tolerably solid to the feel. He complained of a great deal of pain in the leg, particularly about the knee, and along the course of the perineal nerve. All pulsation through the tumour was effectually stopped by compressing the femoral artery over the pubis.

On the 20th August Dr. Carte's compressors were applied, one on the artery as it passed over the pubis, the other in its femoral course as indicated; pressure by either of these commanded the circulation, but he did not bear either of them long screwed down, particularly the femoral pad, which he said was very painful. He was in such a state of terror that we

could not induce him, or persuade him, to allow either to remain screwed home during the night. His habit was to wear either one or other screwed down, principally the compressor at the pubis (but alternated occasionally), from about 10 in the morning till 11 P. M., when I may say nearly all pressure was discontinued during the night.

On the 1st September we considered that he was making progress, and this notwithstanding that the pressure was not constant, and that, besides, the instruments to a certain extent were inefficient; however, the tumour was harder, more circumscribed, and we could move the tendons of the hamstring muscles distinctly on its surface. The limb was colder than the other.

September 15th. He complained of very great pain along the outside of his knee and down his leg; the tumour was harder, and we felt a small artery faintly pulsating on the surface of the tumour.

22nd. The tumour felt *softer* than heretofore, and the pulsation of the small artery was stronger, and the patient was more reconciled to his situation, but could not be persuaded to keep up continuous pressure throughout the twenty-four hours. I did not urge him very strongly on this point, as I considered the compressors very inefficient, and I daily expected new instruments from Fannin and Co. Matters remained in this condition, the limb being of course daily examined, but without any decided change, till the 29th September, when we found that the pulsation in the tumour had ceased. The patient alleged that while eating his breakfast the pulsation was distinct. *On my examination, about an hour afterwards, it had ceased.*

The compressing apparatus was kept on till Saturday, the 3rd October, as a precautionary measure.

3. CASE OF ANEURISM OF POPLITEAL ARTERY CURED BY COMPRESSION, BY DR. SARGINT.

Pat Toohill, aged 38, a man of highly nervous temperament, a gardener by trade, was admitted into Clonmel Union Poorhouse June 17, 1857, with popliteal aneurism of the right leg. On admission he stated that for a considerable time past he had suffered from a large lump at the back of his knee-joint, which prevented him from straightening the leg more than to an angle of about 45°, and which obliged him to give up his work, as he could not walk without the help of a stick. At times he sufferred from a good deal of pain in the leg and down to the

foot. He could not account in any way for the swelling, unless that in digging he might have strained himself. He had applied to a *quack*, who promised to cure him, and made him apply *poultices* "to bring out," as he said, "*a large worm which was in it.*"

On admission, the tumour was found to be as large as the closed fist, and was pulsating very strongly. It was greatly thinned towards the outer hamstring muscle. The heart and whole arterial system were in violent action, though, after a very careful examination, Dr. Scully (under whose charge he was admitted) and I were of opinion that there was not any organic disease.

Though considering this an unpromising case, yet we determined to apply compression, and accordingly, on June 18, one of Dr. Carte's compressors was placed on the limb, at the junction of the upper and middle third of the thigh, and as he could not bear the pressure for more than ten minutes at a time, we tried to extemporize another with a band of iron and a common tourniquet, but as this was found difficult to be kept in its place, it was determined to fit a second compressor.

June 19th. On laying a 7 lb.-weight on the artery, at Poupart's ligament, it was jerked off as if it were a cork. The patient being a strong healthy man, we thought it advisable to take twenty-four ounces of blood from the arm *pleno rivo;* this in a degree quieted the arterial action. He did not get much sleep, as he was constantly watching the instruments.

22nd. Having applied the second compressors to-day, the patient, who is an intelligent man, was taught how to alternate them, which he did very well. To have meat and milk diet.

27th. There has been some œdema of the leg, which is now nearly gone. He suffers no pain, unless when one point of pressure is kept too long.

July 1st. Has been very well able to sleep, and fully commands the pulsation in the tumour; yesterday and to-day he has felt a sharp, burning, pricking pain in the tumour and round the knee.

4th. Pulsation greatly diminished; the pain round the knee has been greater, and the smaller arteries are all enlarging. The tumour is greatly solidified, except at the outer thin portion, but even there it has a firmer feel.

11th. Has continued to improve. All pain round the knee has gone. There are two arteries over the thinner portion of the tumour, which pulsate strongly, and it is difficult with them to say whether there is any in the tumour itself; so we consi-

dered it a safe plan to leave on the instruments for a few days longer, especially as they had quite ceased to annoy him.

16th. No pulsation can be detected in the tumour, which is quite hard and firm, and is now not much more than half its former size. He can bend the leg much more than before. The action of the heart and arteries is considerably diminished. Compression removed.

18th. The tumour is rapidly decreasing in size. He was allowed up for a short time.

21st. Can walk about without any help; the leg nearly straight, and the tumour about the size of a small hen-egg; says he could use the leg as well as ever, but that he is a little stiff from being in bed.

[The cases of aneurism here detailed cannot but speak most strongly in favour of the treatment by compression. We are continually struck by the difference in the results of the recorded cases in this country and elsewhere. In Ireland, we may confidently say, we very seldom have a failure. In England and Scotland, on the contrary, not above 50 per cent. appear to have a happy termination. This is owing, we believe, to the want of attention to those minutiæ in the treatment which, in Ireland, are so fully observed. Even at the present time, after all that has been written on the subject, we find the treatment of aneurism by compression undertaken without any regard to the condition of the individual, or the form of instruments employed. This, we need hardly observe, cannot but tend to failure. The surgeon who undertakes the employment of any mode of cure should make himself familiar with its details, and provide himself with the means of carrying out the treatment properly. He should make himself thoroughly acquainted with the best authors on the subject, and employ the means they recommend. It was by this careful attention, it is sufficiently evident, that Drs. Gelston, Babington, and Sargint, obtained such successful results in the cases above detailed.—Ed.]

Art. XV.—*Note by* Dr. Thorpe *to his Essay at page* 95.

Chloroform in Strumous Ophthalmia.—In my paper on Ophthalmic Hyperæsthesia, in the last Number of this Journal, I stated that, so far as I was aware, the inhalation of chloroform, as a remedy in strumous ophthalmia, and as a means of enabling the practitioner to examine the eyes in cases of intractable photophobia, was not mentioned in any standard work on ophthalmic surgery, nor in any recently published lecture on the subject. I find, however, by referring to the Medical Gazette[a], and to Mackenzie's Practical Treatise, last edition, 1854, the inhalation of anæsthetics recommended by that excellent practitioner, as a means of reducing inflammation in scrofulous and other forms of ophthalmia, of relieving photophobia, and of enabling the surgeon deliberately to examine the eyes and to make applications to them. I am not, therefore, as I believed, the first to put on record the employment of chloroform for the purposes referred to.

[a] Vol. xxix. page 1077.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

1. *Eighth Report of the Inspectors on the District Criminal and Private Lunatic Asylums in Ireland.* With Appendices. Presented to both Houses of Parliament by Command of Her Majesty. Blue Book. Dublin: Alexander Thom and Sons. 1857. Folio, pp. 76.

2. *Eleventh Report of the Commissioners in Lunacy to the Lord High Chancellor of England.* With Appendices. Ordered by the House of Commons to be printed, July 7, 1857, in return to an Order of the Honourable the House of Commons, dated June 23, 1857. (Colonel Clifford.) Blue Book. 8vo, pp. 138.

3. *Report by Her Majesty's Commisioners appointed to inquire into the state of Lunatic Asylums in Scotland.* Presented to both Houses of Parliament by Command of Her Majesty. Blue Book. Edinburgh: Thomas Constable. 1857. 8vo, pp. 257; and separate Appendix to ditto, pp. 528.

4. *The Asylum Quarterly Journal of Mental Science.* Published by authority of the Association of Medical Officers of Asylums and Hospitals for the Insane. Edited by Charles Bucknill, M. D. Lond., Physican-Superintendent of the Devon County Hospital for the Insane. London: Longman and Co. Quarterly Numbers, 20, 21, 22, and 23, for the Year 1857.

5. *The Journal of Psychological Medicine and Mental Pathology.* Edited by Forbes Winslow, M.D., D.C.L., President of the Association of Medical Officers of Asylums and Hospitals for the Insane. Nos. 5, 6, 7, and 8, New Series, for the Year 1857. London: John Churchill.

6. *The American Journal of Insanity.* Edited by the Officers of the New York State Asylum. Nos. for July, 1856, and April, 1857. Utica: New York State Lunatic Asylum.

7. *Notes on Belgium Lunatic Asylums, including the Insane Colony of Gheel.* By JOHN WEBSTER, M.D., F.R.S. 8vo, pp. 68.

8. *Twenty-seventh Annual Report of the Belfast District Hospital for the Insane, to March* 31, 1857. By ROBERT STEWART, M.D., Physician-Superintendent. Pamphlet, pp. 47.

9. *Second Annual Report of the Sligo District Hospital for the Insane, to March* 31, 1857. By JOHN M'MUNN, M.D., Physician-Superintendent. Pamphlet, pp. 52.

10. *Sixth Annual Report of the Wilts County Hospital for the Insane, for the Year* 1856. By JOHN THURNAM, M.D., Physician-Superintendent. Pamphlet, pp. 43.

11. *Seventeenth Annual Report of the Crichton Royal Institution for the Insane at Dumfries.* By W. A. F. BROWNE, M.D. Physician-Superintendent. Pamphlet, pp. 44.

12. *Twenty-seventh Annual Report of the Aberdeen Royal Hospital for the Insane, to March* 31, 1857. By ROBERT JAMIESON, M.D., Physician-Superintendent. Pamphlet, pp. 26.

13. *Thirtieth Annual Report of the Perth Royal Hospital for the Insane, to June*, 1857. By LAUDER LINDSAY, M.D., Physician-Superintendent. Pamphlet, pp. 50.

14. *Report of the Pennsylvania Hospital for the Insane for the Year* 1856. By THOMAS S. KIRKBRIDE, M.D., Physician-Superintendent. Pamphlet, pp. 68.

1. WE commence our usual Annual Review of Insanity on the present occasion with the "Eighth Report" of the district and other hospitals for the insane in Ireland, which is brought up to the 31st of March, 1857, and extends over a period of two years. As we have but a limited space at our disposal, and several other important and interesting publications of similar purport to pay due attention to, we shall be compelled to be briefer in our notice of the one before us than we could wish; to render due justice to its valuable contents would of itself occupy all the room at our command.

Origin of Hospitals for the Insane in Ireland.—The Inspectors, after shortly referring to the Commission of Inquiry

now in operation in regard to the state of Lunacy in Ireland, and observing upon the varied business of their own department,—the same involving a correspondence of upwards of seven thousand letters in the year, together with frequent official inspections,—proceed to give a full history of the rise and progress of the accommodation for the insane poor in Ireland, from which we learn that the existing system of district asylums had its beginning with the 55 Geo. III. c. 107, under the provisions of which the Dublin, or, as it is commonly called, the "Richmond Asylum,"—in compliment, we presume, to the then Lord Lieutenant, the Duke of Richmond, as the Cork District Asylum was named the "Eglinton"[a] (it having been opened under the immediate auspices of that Lord Lieutenant),—was built and put into working order by Government, at a cost of £75,000, to serve as an hospital for the insane for the whole of Ireland, and to be supported by Parliamentary grants. The next step taken by the Legislature in regard to the care of the insane was in the year 1817, by the appointment of a Select Committee of the House of Commons to consider the expediency of making a general provision for the lunatic poor in Ireland, which resulted in the enactment that year of the 57 Geo. III. c. 106, entitled, "An Act for the establishment of Asylums for the Lunatic Poor in Ireland;" and since which so many as seventeen Acts have been added to the Statute-book connected with the insane in this country; the last one passed being the 18 and 19 Vict. c. 99, in 1856, commonly called Sir Robert Ferguson's, and having reference to the superannuating of officers of asylums.

After the establishing of the Richmond Asylum, nine provincial institutions were successively put into operation, the first being at Armagh, which was opened for the reception of patients in 1825; then Limerick in 1826; Belfast in 1829; Londonderry, 1829; Carlow, 1831; Ballinasloe, 1833; Maryborough, 1833; Clonmel, 1835; Waterford, 1835.

The above nine asylums were erected at a cost of £209,085 4*s.* for an aggregate number of patients amounting to 980, which was considered would have been quite sufficient to meet the wants of the insane poor of the country. But soon this was found so very fallacious a reckoning, that by interior ar-

[a] We observed in the newspapers lately, that a move had been made at the Board of Governors of this Asylum to designate the institution according to its locality, simply; and very properly, we think, as in the case of all the others, except the Richmond, which, having been built at the expense of Government, had some right to be thus particularized.—Rev.

rangements and without any additions, the 980 were nearly doubled, so many as 1930 being by these means accommodated within their walls. The pressure from without, however, became so great, that Parliament had again to be applied to in 1826, when the former nine districts were reformed, and additional asylums erected, upon which a further total of 1400 patients was enabled to be provided for in asylums.

Cost of Asylums as at present in operation.—The Report next affords a detailed statement, very interesting, no doubt, to grand jurors, boards of governors, and rate-payers, of the individual cost of each asylum, even to a fractional nicety, with which, however, we need not occupy our space, further than to state that the net cost of the district asylums, every charge inclusive, as they now exist (sixteen in all), amounted to £584,191; this sum not including certain abatements allowed by Government for defects in buildings, or a portion of the expenditure in connexion with the recent additions made to the Belfast Asylum.

Commission of Inquiry respecting the Erection of Asylums.—Reference is made to the proceedings of the Commission of Inquiry into the erection of Lunatic Asylums, the particulars of which we gave in our last Review, so that we need not now again refer to it. The following extract we give from the Inspectors' Report, clearly indicating the substantial benefits obtained by the rate-payers in their transactions with the Treasury in regard to the erection of the district asylums in Ireland:—

"Taking 4 per cent. as the minimum rate at which money could be obtained, even on the best security, it will be found that had interest been charged by the Treasury for advances, it would amount on the sums already repaid to £80,000, and to a similar sum in respect of the recent assessments. Thus, with the gift of the Richmond Asylum and the late remissions, to which may be added about £90,000 paid by Government for the support and maintenance of the old House of Industry patients, pauper lunatics belonging principally to Dublin and the adjoining counties, in Island Bridge and the Hardwicke cells, since Richmond was declared a district asylum, the country appears, on the whole, to have received a clear benefit to the extent of £350,000 in its transactions with the Treasury, on account of lunatic asylums."

Statistics.—The statistical portion of the Report is exceedingly elaborate and interesting. From it we collect that on the 31st of March of the present year the number of the insane of

all classes in Ireland amounted to 14,141, of which 6520[a] only were located in public and private asylums, gaols, and workhouses; the remainder, 7612, not being under official care. The Inspectors appear to have taken the greatest pains to obtain accurate data of this important branch of their Report, which is one very suggestive in its several bearings, and worthy of the deepest attention. Their labour must have been considerable when we find that they succeeded in getting the "name, age, address, and religion, of every individual in Ireland, whether lunatic, idiot, or simply epileptic." It appears that of the latter class (the epileptic) 2171 have been reported to the Inspectors, who for the most part are capable of free agency, which, deducted from the 7612 not under any cognizable treatment, would reduce the number requiring direct supervision to 5441.

Insane Patients in Workhouses.—The Inspectors continue of opinion, and we entirely agree with them, as to the great impropriety of the insane of any denomination being located in the union workhouses. This is altogether wrong, and both public and professional feeling is unanimous for its discontinuance. On this head the Report very judiciously and truly observes:—

"It would be falling into a great mistake to imagine that even the most miserable objects of mental incapability are beyond the reach of being relieved; for there is no species of disease or affection, from the highest state of maniacal excitement to the very lowest grade of imbecility, that does not admit of cure or amelioration under judicious treatment, such alone as can be obtained in establishments exclusively devoted to the object."

But we decidedly differ from the Inspectors' plan of providing for the class of cases at present in the workhouses of Ireland, namely, in "auxiliary buildings" in immediate connexion with the existing asylums. On this head we have more than once fully stated our views, which are simply, that entirely distinct and separate establishments (inexpensive as may be) should be provided for such, as well as for the altogether hopeless cases in our public asylums; thus leaving the latter "free" (to quote from the Report) "to exercise their proper and legitimate functions of hospitals for the cure of insanity, instead

[a] We find a slight discrepancy here, as, further down in the Report, the separate numbers, added together, of those under restraint, viz.:—In public asylums, 3856; Central Asylum, 126; Hardwicke cells, and Lifford local Asylum, 108; private asylums, 462; gaols, 175; poor-houses (workhouses?), 1799, produce a total of 6526, being six more than this number.—Rev.

of being mere receptacles for the safe keeping and maintenance of chronic cases."

Cost of Patients' Maintenance.—The average maintenance charge per head, for the last two years, of the inmates in the district asylums, was only about £20, which must be considered extremely moderate—perhaps too much so—to render full justice to patients so peculiarly circumstanced and unhappily afflicted. Highly taxed rate-payers, and parsimoniously inclined Boards of Governors, would not, of course, think thus; but, looking, as we do, at this important point of detail in a professional and philanthropic point of view, we are almost afraid that too much stress is apt to be placed, and too much official approval bestowed, upon the lowest figure at which the poor insane can be maintained; and that it is too generally overlooked how false and expensive that system of economy is, which would stringently tie up the hands of those immediately charged with the care and treatment of the insane in our public asylums.

Hygiene.—The sanitary condition of the district asylums, during the two years embraced in this Report of the Inspectors, was, on the whole, most satisfactory and favourable. The aggregate of recoveries appears to have been 17 per cent., or 37½ on the admissions; the relieved, 11½ per cent.; and the mortality so low as 9 per cent., being 1 per cent. less than in the preceding biennial Report; and no epidemic since 1853,—a very conclusive proof that their internal and hygienic management deserves a large share of commendation. But two cases of suicide occurred during the above period, which must be considered surprisingly small, and another speaking fact of unremitting attention on the part of the attendants.

Physical Restraint.—On the subject of mechanical restraint the Inspectors thus wisely, and to the point, deliver themselves:—

> "This question is one more properly for the judgment of the local medical superintendents; and as we believe they are alike influenced by the most humane motives, and a desire to do what is best for the safety of their patients, we would deem it unadvisable, on our part, to lay down any *fixed rule* on a system which is at issue between enlightened practitioners, and which, further, there is *no authority to enforce.*"

The italics here are our own, and we could only wish that certain other "Commissioners in Lunacy" had manifested equal judgment on this and other matters of detail in the daily conduct of asylums.

Occupation of Patients. — Husbandry for the males, and laundry work, with spinning, knitting, &c., for the females, are the principal means of employment in our public asylums. With regard to the men, it appears that a daily average of 422 worked 421 acres, the sum in money realized thereby being £4167, exclusive of the value of produce in vegetables consumed in the several establishments, which is clearly a very satisfactory *financial* result, though, of course, the primary object in employment should be the mental and physical health of the patients themselves.

Pay Patients.—Though entirely opposed to the letter and spirit of the laws regulating the management of public asylums in Ireland, a practice has sprung up, it seems, of late years, in some of them, to admit patients for payment. During the past year alone, the sum of £736 was thus illegally obtained. We have felt it our duty earnestly to remonstrate in our annual Reviews against mixing up institutions, solely set apart by the Legislature for the "lunatic poor," with a paying class of inmates. We have no hesitation in stating that the principle is bad in every point of view, and we hope that the attempt which is being made to establish admissions of this kind by Act of Parliament will not succeed,—the good sense of the Legislature rejecting the proposition again, as on a former occasion. It is astonishing how, for one moment, any number of sensible men could suppose that a pay class and a pauper class of patients could be harmonized in the one institution, sitting down together at the same table, and in all respects, except in regard to clothing, to be treated as one and the same class. This, however, is the proposal which has been gravely submitted to Parliament, but it only shows that those making it have no experience in the practical working of such peculiarly circumstanced establishments, in which everything should be endeavoured to be made as suitable as possible, and not as antagonistic, as this movement would appear to portend. The Inspectors say that—

> "On principle they are opposed to the maintenance of paying patients in district asylums; still, from motives of common humanity, in the absence of a suitable refuge for the insane members of humble, but respectable families, and where there is a good margin of vacancies, as at Mullingar, Killarney, &c., it would be hard to debar a fellow-creature of a public establishment."

Now we have again and again shown, that the members of respectable families, when the subjects of insanity, are not debarred from the advantages of the district asylums, into which

they are equally easily admitted and eligible as the poorest, on an affidavit being made that the means of paying for them in a private asylum are not to be commanded, which we maintain is all that is required, and that no new-fangled legislation on this head is at all necessary. Intermediate asylums between public and private ones are what are loudly called for; those in which "the insane members of humble, but respectable families," could be placed and supported in some measure according to their previous status in society, at a moderate cost. Clerks, governesses, &c. &c., should, most assuredly, have a refuge above a pauper asylum when unhappily the subjects of mental disease; and if philanthropic parties would turn their attention to something practical of this kind, they would indeed be conferring a substantial benefit, in a way of all others which would be eminently humane, and productive of the best results.

Religious Ministrations, Education, &c.—The Inspectors next make a passing reference to "religious ministrations" by paid chaplains, which they, of course, continue to advocate, as in duty bound; to the degree of "education amongst the insane," which they state is in a higher ratio with the inmates of public asylums than in the general population; to "religion" as an exciting cause of insanity, considering it an agent not so powerful in that respect as is supposed, and in which we are inclined to agree; that "love from misplaced affections, particularly in the female sex, is a much more fruitful source," as a moral cause, of bringing this disease into action. They are of opinion that, from the extended inquiries they have instituted, and making every allowance for facilities of admission into asylums, that insanity must, on the whole, be considered to be on the increase, which, however, we ourselves think is still problematical.

Incurables.—That the district hospitals for the insane in Ireland are not in a worse position, as to chronic cases, than the institutions for the insane in the sister country, over the Continent of Europe, and in America, the Report plainly shows, as well as that this result in the treatment of the disease is inseparable from the nature of lunacy; and further, the Inspectors might have added, that the objected to "incurables" in our asylums are just as much the bounden objects of the nation's care and comfortable position as recent cases, though without any hope of being ever again restored to society. Still, their existence under due treatment can be, and is, made comparatively useful and happy, and their affliction, to a considerable degree, greatly ameliorated. The Inspectors, in the following extract, show how very inconsistently the local public

bodies in Ireland act in regard to these, in their eyes, very troublesome "incurables:"—

"Lunatics would seem not only to stand themselves, but occasionally to place some of those connected with them, in an anomalous position. The governors of asylums, for instance, complain that the institutions are congested with incurable cases,—the very same men acting as boards of superintendence of gaols find fault with lunatics being placed in prison, and endeavour to hurry their transference to asylums, no matter what the character of the disease; and as poor-law guardians object to the residence of insane persons within the walls of a workhouse, availing themselves of the first opportunity to have them committed to gaols as dangerous. Expense is prominent in the eyes of the asylum governors; the subversion of prison discipline, to boards of superintendence; and a troublesome inconvenience to poor-law guardians. We concur fully in the sentiments of the two last-named Boards, and would disembarrass gaols and workhouses of all lunatic inmates; and, partially agreeing with the asylum governors, we would meet the difficulty of expense by the plain but suitable buildings we have already adverted to, establishing one authority for the moral, curative, and fiscal management of the insane generally."

Salaries and Superanuation Pensions.—To the subject of insufficient salaries and the superannuation of officers of asylums, the Inspectors in this Report earnestly direct the attention of Government, as they had repeatedly done before, and this greatly to their credit; but though they have always fulfilled their duty in this respect honestly and strongly, yet the point at issue might be urged by other than parties who are not themselves Government officials with increased force, and more especially against the unasked-for Act of last session, regulating superannuations; an Act which was considered more a mockery than even an instalment of what was due to those hard-worked and ill-remunerated officials; for of all other departments of the public service, the labour, the responsibility, the anxiety, the personal risk, they are constantly subject to in the discharge of their arduous and never-ending duties, should obtain for them much more liberal salaries than they receive, and fairly *entitle* them to their full allowances on retirement, after an ample service, say of twenty-five years as the maximum. On this point the Report truly says:—

"That provision should be made for the officers of district asylums, as elsewhere, when worn out by age and length of service, is but just and reasonable, and on principle has been ever advocated by us. We know no duties so onerous and so unceasing as those connected with the management of the insane, entailing at all hours

the same anxious responsibility. As the labourer is worthy of his hire, a liberal recompense when engaged on service, and the certainty of a commensurate allowance on retirement, is but a reasonable expectation; and we cannot but think that the staff of lunatic asylums in this country, as a body, are not only underpaid when on duty, but that an exceptional rule should be made in favour of deserving officers who, growing old in them, are rendered unfit for after-employment by previous habits, professional or other. Take, for example, the medical superintendents, restricted to a sort of cloister life within the precincts of an asylum,—men of education, enlightened views, and varied acquirements, their hours devoted to the good of the helpless and afflicted, and compare their salaries with those paid to the members of other professions, who are certainly not superior in knowledge, and whose sphere of action, though useful and necessary for the well-being of society, is not directed to the attainment of a higher or more important object than that of the individual who labours to ameliorate the condition of his fellow-creatures, under the heaviest and most dreaded visitation to which mankind is liable."

Charges against Superior Officers.—To be a servant of the public, and especially when that service is confined to, and rendered within, the four walls of a public establishment, and that establishment of all others peculiarly delicate in its duties and responsibilities, is, most assuredly, a trying post. The resident physicians of the district hospitals for the insane are a class of officials intrusted with most confidential and complicated duties; they are held responsible for the good working of the entire of their respective establishments. They are required, at least, and supposed to exercise, full control, or paramount authority, as the Lunacy Commissioners in England so well express it, over the other officers, and yet they are not, in many instances, given the means of doing all this; but if anything goes wrong, —if any screw becomes loose—they are nevertheless immediately called to account and liable to censure, for whatever the offence or shortcoming may be, and this notwithstanding that their own hands may be so tied up as to be totally helpless in preventing abuses. They, for instance, are accountable for the female as well as the male department of the asylum, and yet on that side of the institution an *imperium in imperio* is endeavoured to be carried out by the matron, who presumes to arrogate to herself entire control therein, and considers it a kind of compliment, forsooth, that her superior officer, the resident physician, should enter her premises, or exercise any authority, when he deems such called for: the natural consequence of having in our public asylum *lady-matrons*, exercising an independent power in their own department We have more

than once denounced this most pernicious system, which is so destructive to that unity of action that should be the beginning, middle, and end, in the daily management of our hospitals for the insane. Look to what occurred in the sister country, owing to the existence of this matronly exercise of authority and separate jurisdiction under the same roof. Bethlem Hospital was reduced to almost a state of anarchy, and insubordination proceeded to so great a height, owing solely to the matron assuming chief authority, that its conduct ultimately became so notorious as to require a special inquiry, the result of which was, that innocent parties were involved in the matron's usurpation of authority, and who, as part of the holocaust that an outraged public demanded, had to resign their situations, to give place to a new *regime* being instituted, and full authority vested in the hands of the resident physician. Then, disorder gave place to order, and peace and harmony have ever since continued to reign in that institution. Again, in the Worcester Asylum, owing to the matron's annoyances and interferences, she so weighed down a sensitive mind as unhappily to produce suicide, and lose to that institution the services of a most accomplished and eminently qualified resident physician, who could no longer brook the indignities he had, in this way, been subjected to. Why have we made these remarks? They have been elicited in consequence of the annexed extract from the Inspectors' present Report, according to which it will be seen that our asylums in Ireland have not passed unscathed out of the matrons' hands; and that in two instances attempts were made, as in England, to sacrifice the responsible heads of the asylums to their offended dignity, but happily were signally frustrated in both. The extract is as follows, the only further remark upon which we shall make is, that nothing could more clearly show what we have advocated before in these annual notices, that the matrons, like all the other secondary officers, should be appointed by the resident physician, and entirely subjected to his control, or otherwise we may expect frequent re-enactments of similar and worse proceedings than are here depicted:—

"It is our duty to state that two instances occurred of charges having been brought by officers against their superiors. The first was at Maryborough, when, after a preliminary inquiry at the local Board, the Inspectors were requested by it, and subsequently directed by your Excellency, to institute an investigation, for which purposes they visited the Asylum specially.

"When called upon, however, the matron, who had preferred the charges, begged to be allowed to withdraw them. Neither

knowing their truth herself, nor being able to substantiate them by witnesses, she frankly confessed that they were grounded solely on hearsay.

"The particulars of the case having been duly submitted, your Excellency was pleased to direct that a letter be written to the Resident Physician, intimating that no imputation whatever rested upon him; that his character and fitness for the responsible office held by him remained wholly unimpeached; and that the matron should be cautioned to be more guarded in her statements for the future. The second took place at Mullingar, where, as it appeared, the accusations made were not only groundless, but vindictive; the complainant was dismissed by order of Government, on a unanimous resolution of the Board."

Successful Results.—The Inspectors bear the fullest testimony to the generally successful manner in which the public hospitals for the insane in Ireland have been carried on since their foundation, as well as to the entirely humane and benevolent treatment by which they have been characterized, "not being sullied with the imputation of a single act of cruelty, save in one instance, where an attendant was prosecuted to conviction for maltreating a patient;" and pointing with commendable pride to what we have ourselves before drawn attention to, which is here positively stated *ex cathedrâ*, that from their first commencement, forty years ago, the non-restraint system—so much vaunted in the sister kingdom, as if there first thought of and practised—was acted upon by an order of the Lord Lieutenant and Privy Council, and has been continued steadily to the present time; that order directing that the utmost latitude of personal liberty consistent with safety, mildness and the avoidance of every cause of irritation, should be the constant daily practice observed within them; in fact, what has invariably been the case, that mechanical restraint, even in its minimum amount, should be the exception, and perfect freedom the rule pursued towards their inmates.

Deficiency of Furniture, &c.—The local boards of governors, the Inspectors state, are chargeable with an excess of economy in the internal fittings and furnishings of their respective establishments. This species of parsimony is decidedly bad and reprehensible. We all know and appreciate the comforts of a well-appointed home; and although a class of persons not usually accustomed to the most ordinary decencies of civilized life in their own abodes, occupies our public establishments for the insane, yet it ought to be held in view that one of the principal objects in their treatment should be to elevate their degraded social status in every possible way; and a more tangible means of doing this could not be had re-

course to than by having all the arrangements of our asylums made pleasing to the eye, and so appointed as to create new sensations, thus diverting the insane patient from his morbid train of associations, and inducing a more healthful action of mind. Too little attention, we fear, is in all instances paid to this important matter of detail in Ireland. The common excuse of governors who, for the most part, know nothing of a subject upon which they take on themselves to be sole arbiters, is, "Oh! they were never accustomed to comforts, and why should we indulge them with what they never had at home, and could not enjoy even were such at their command?" But the force of this we altogether deny, and in candour are obliged to confess that the district asylums in this country are far behind the age in their internal appointments, being cheerless and bare-looking to a degree, and only too much calculated to give occasion to strangers to shrug the shoulder, and carry away with them an unfavourable impression of our philanthropy and genuine desire to ameliorate, by reasonable physical indulgences, the condition of the insane poor. Whereas the expenditure of a comparatively small sum yearly in material comforts, and some even of the little refinements of private life, would give quite a different tone to our institutions, and raise them both in usefulness and in general estimation. We are, accordingly, very glad to find that the Inspectors have not passed by the deficiencies we have been alluding to, but have referred to them so unmistakably, that if the local boards of governors do not take the hint now given to them in the annexed extract, and put their asylums in more complete order by being a little less parsimonious, they need not be surprised if their *prestige* shall be materially affected thereby. The Report on this subject states:—

"The cost of erection of these various institutions has been already given in detail; and we would now only observe, that the governors of them, apprehending the assessment which for a certain time must be levied to meet Treasury repayments, consider it a duty to restrict in every possible way all expenses save those absolutely requisite, and not to replace fixtures or furniture, even though objectionable in their eyes, till completely worn out. We think, however, that economy may be occasionally carried out to an unprofitable extent; and that stopping short, and not efficiently following up a regular system of management, would be almost as bad as not to have undertaken it at all. Our domestic arrangements may not be on an equality with those in many English asylums, which, too, may be similarly inferior in regard to what obtains in France and elsewhere, for local circumstances produce their relative differences. Generally speaking, a deficiency of furniture, and

with it a certain air of discomfort, is noticeable in Irish institutions for the insane, a want which, we trust, with the advancing prosperity of the country, will be gradually obviated."

Dangerous Lunatics.—As we proceed in our analysis of this excellent Report, we observe that the Inspectors very properly and strongly animadvert upon a growing abuse in this country, that of committing insane patients to the county gaols as "dangerous lunatics," prior to their transference to a district asylum by warrant of the Lord Lieutenant. It is surely high time for the authorities to bestir themselves in the prevention of so great and serious an evil as this one undoubtedly is, and had recourse to frequently, there is much reason to believe, by interested parties who wish to save themselves the trouble of obtaining admission for their relative or friend, as the case may be, into an asylum in the usual way; and besides, having thus accomplished their object, they are freed from all further responsibility in the case. It would appear, too, that there is little or no control with respect to those committals, and that so many as eight or nine are returned to the Inspectors' office by the same post, Dublin alone sometimes producing four or five such in a single day.

Dundrum State Asylum.—The Central Asylum at Dundrum, the Report before us observes, continues to maintain its high character for usefulness and superior management, under the excellent superintendence of Dr. Corbet, its most benevolent and painstaking Resident Physician, since the period of its coming into operation in 1849. It contained a population of 82 males and 44 females at the date to which the Inspectors' Report is made up, viz., the 31st of March last. The discharges and deaths for the last two years were 26, of whom 21 were males, and 5 females. Of those discharged, 14 were recovered, 7 of whom were liberated by order of the Lord Lieutenant; 3 were remitted to gaol for trial; 3 (convicts) were returned to the prisons whence they came, 1 as a prisoner to a county gaol, 1 to a private asylum; and 11 died. The particulars of several very interesting cases of its inmates are related, which we regret we can do no more than simply call attention to.

Private Lunatic Asylums.—The Inspectors' Report informs us that there are 14 private asylums in Ireland; 9 of which are located in the immediate neighbourhood of Dublin, containing, on the 31st December last, divided amongst them, 359 patients; and the other 5 in the provinces, viz., 1 in Ulster, at Armagh, containing, on the above date, 24 patients (14 males, 10 females); 3 in Munster, 2 of which are

near Cork; 1 with 19 (11 males, 8 females); the other with 32 inmates (22 males, 10 females); and 1 near Limerick, with 8 patients (5 males, 3 females); and 1 in Leinster, Queen's County, having 20 patients (12 males, 8 females): thus making a total number of patients, in private asylums, of 462 (252 males, and 210 females). The professions, &c., of the males were as follows:—Army, 23; navy, 5; church, 24; law, 20; medicine, 7; students, 14; traders, 37; farmers, 29: no occupation, 253. Total in asylums, 462. The cured amounted to 47 (24 males, 23 females); the deaths to 26 (11 males, 15 females). One of the private asylums in Dublin is the celebrated Swift's Hospital, which contained within its walls, on the 31st December, 1856, 148 patients (76 males, and 72 females). Its discharges in recoveries numbered 1 only, a female; its deaths to but 7, which was a singularly low mortality. It is stated, as a remarkable fact, that the per-centage of recoveries in private asylums is greater among females than males, which is accounted for in the following manner:—

"There exists a greater recuperative power among females admitted into private asylums than among males,—the reverse being generally the case, though not to the same extent, as regards public asylums.

"Our experience would refer the explanation of this discrepancy to the fact (at which we have arrived after a careful analysis of the many thousand cases of lunacy which, from time to time, have come under our notice), that while moral causes, such as grief, love, anxiety, disappointment, &c. &c., more largely predispose females of the better classes—from their superior education and more refined sensibilities—to mental disease, provided there is no fixed hereditary tendency to insanity, time, quietude, and, above all, absence from the immediate exciting causes, gradually effect a cure."

The sanitary condition of the several private asylums appears to have been excellent, and their general management to have met with the Inspectors' fullest approbation. But one accident occurred during the year, that of a male, who died the next day after dropping himself the previous night from his window, with the view of effecting an escape. On a post-mortem examination a rupture of a bloodvessel in the liver was discovered, which previously had been in a diseased state. No blame whatever could be laid to the charge of those responsible for his care.

The non-restraint system in its entirety is generally practised in the private as in the public asylums in Ireland. In a very few instances mechanical restraint is had recourse to in the former, in its mildest form. A very extraordinary and perplexing case

is related of a female in the Midland Retreat Asylum, who made strange and innumerable attempts to effect self-destruction, and respecting which the advice of the Inspectors was sought as to the best means of dealing with, no restraint being permitted in that Asylum. Without any disrespect to the sound advice which, no doubt, the Inspectors could have given, we would have acted upon our own responsibility in the emergency, in doing what we considered best under the circumstances, and not have troubled them on the subject. Some deviations from the Private Asylums Act are noticed by the Inspectors as having occurred on the part of proprietors. One was, that of having more patients than licensed for, which subjected the proprietor to a prosecution for a misdemeanor; but the matter having been satisfactorily explained, no prosecution was instituted. Other neglects consisted in not giving notice within the prescribed time (two days) of the admission, discharge, or death of a patient,—a provision of the law admitted by the Inspectors to be too stringent, and calling for amendment. As a whole, the private asylums in Ireland bear a high character, and, with but two or three exceptions, their proprietors are respectable members of the medical profession (which we consider should unquestionably be a *sine qua non* for proprietorship); and, we are happy to add, none are conducted by *females*, as is the case in similar establishments in England and Scotland. The subjoined extract on their present condition will speak for itself:—

"Altogether, our private asylums are, we are happy to say, steadily improving. For, however deficient a few may be as yet, in some respects (and amongst others, we regret to state, not only in neatness, but also in the essential quality of cleanliness, in regard to which we have observed, now and then, grave cause of complaint), still, each succeeding year produces its favourable change in them; and if their present domestic arrangements were contrasted with those that obtained some short time back, we are satisfied a benevolent mind could not fail to find ample cause of gratulation. We have had to deal, in many instances, with proprietors originally without capital, and with patients paying irregularly as to time, and indifferently as to amount. Thus some private asylums might be fairly regarded in the light of so many necessary evils, as in their absence a majority, perhaps, of their unfortunate inmates would be absolutely neglected. Nevertheless, we feel fully enabled to state, that they have at all times been free from the imputation of the existence within their precincts involving personal cruelty,—which is more, perhaps, than can be said of some institutions of a similar kind elsewhere. We beg to assure your Excellency that it has been our unceasing endeavour to obviate, as far as lay in our power, such

faults, deficiencies, or instances of neglect towards the inmates of private licensed houses as have come under our observation, and which, but for our interposition, would have remained, perhaps, altogether unheeded; for it is a melancholy fact, and one redounding not over-much to the credit of human feeling, that many a poor helpless lunatic, placed within the walls of an asylum, is too frequently forgotten, and, mayhap, the visitation of Providence, in its wisdom, on the parent or sister, deemed a family stigma by the child or brother."

The annexed paragraph on "moral insanity," we are sure, will be read with much interest: all having had the least experience in the treatment of the insane must at once admit its great force and truthfulness:—

"As formerly, so within the past year, cases of moral madness, originating in drink and dissipation, have been frequently admitted into private licensed houses. Some of them, discharged after a few months' confinement, were not since readmitted, whilst others have been brought back. These latter cases are most perplexing; even after the lapse of a few days the salutary effects of control are visible in their regard; once free, however, they become the mere children of impulse, reckless of personal respect, regardless of the value of money, and scorning even decency itself. Rational in conversation, and most plausible in manner within the asylum, their conduct is displayed out of doors in a series of the most irrational actions. It is painful to keep such parties confined, but still more so to let them run at large to certain destruction. As an illustration, we may adduce the case of a lady, at present in confinement in a private licensed house, who has been admitted and discharged four or five times within our knowledge, and who, when at liberty, and mistress of her allowance, spends it in one continued orgy [?] of drink and dissipation. We may here observe, that a characteristic of this class is, at all times, an utter disregard of truth, together with an unceasing desire to impose upon the credulity of their hearers by the most specious pretensions to sense and wisdom, and the most solemn promises that a future morality would efface the errors of their past life."

Intermediate Asylums.—In a preceding portion of this Review of the Inspectors' Report we have referred to the necessity of asylums for a class of patients neither rich nor poor, instead of endeavouring to bungle the matter by placing them as "pay patients" in the district asylums, to the great detriment of the latter, besides being a "cruel kindness" to the former in associating them with a class altogether different in the social scale. We are now rejoiced to find that the Inspectors themselves agree with us on that really important point, as this extract from their Report shows:—

"Heretofore we have had frequent cause to observe the want in this country of asylums adapted to meet the exigencies of a large class, against whom public or pauper district asylums may be regarded as practically closed. We refer to the community of shopkeepers and farmers, who have means sufficient, under ordinary circumstances to place their families beyond the reach of want, but not adequate, when their relatives become insane, to pay for the maintenance of the latter in private asylums. In some few cases of great urgency the governors of district asylums have admitted 'paying patients' at the ordinary cost of maintenance, but this has occurred in those establishments where there existed no pressure for room. We trust that some foundation, whether through the benevolence of private individuals, or by a speculation which, originating in motives of Christian charity, cannot, in the end, fail of success, will, at no distant period, be established. We are the more sanguine in these hopes, as we understand that a bequest of many thousand pounds has been already made for this most laudable purpose, to a committee of gentlemen, and that an institution capable of accommodating thirty lunatics, at an average cost for maintenance of twenty guineas per head, will be speedily opened under their direction, assisted by a religious sisterhood."

In the "concluding remarks" of the Report the Inspectors recommend that existing district asylums, having been put into full repair, and furnished with water-closets, lavatories, workshops, &c., should be constituted hospitals for the treatment of mental disease in its early stages, as well as "receptacles for lunatics, no matter how hopeless their recovery, but who for their own or public safety require a constant and careful supervision." In this we quite agree with the Inspectors. It is what has been respectfully and earnestly suggested over and over again in these Annual Reviews on Insanity, and it affords us much pleasure to find that the Inspectors now bring the just weight and influence of their official position, as important Government officers, in furtherance of so very desirable a change. And again, their recommendation of—

"Disembarrassing poor-houses of all lunatic inmates, and existing asylums of the idiotic and epileptic classes, who are at present supported therein at a large expense, and without any commensurate hope of benefit, by allocating them in plain structures, but still well devised for the object, where quiet and chronic patients might find a refuge, placed under the same central control as the acute and dangerous just referred to, with a scale of dietary and social comforts beyond what are conceded to the ordinary paupers of a Union; having ground for exercise and employment, and their support provided for, as in the primitive houses, by quarterly advances from the Treasury"—

is exactly our opinion, being manifestly what the "pressure from without" so urgently and loudly demands.

That the appointment of the principal officers of the district hospitals for the insane, and the fixing of their salaries, should rest exclusively in the hands of the Executive, as always has been the case, and as now advised by the Inspectors, there cannot be a second opinion; the Report very forcibly observes, on this head, that the Government has "a larger sphere from which to select efficient persons, and of suitable qualifications; for without a competent staff to carry them out, laws or rules, however excellent in themselves, soon practically deteriorate," than which nothing could be truer or more to the purpose. And here we feel called upon honestly and candidly to inform his Excellency the Lord Lieutenant of Ireland, that his recent handing over of his admitted power to a local board of governors in the selection of a resident physician, however well intended on his part, has been considered a very serious blow and great discouragement to the independence and good working of those important institutions, and that a precedent of a most dangerous kind was thus made: one which, however, we sincerely hope will not again be *voluntarily* repeated. With reference to the individual status of the members of local boards of governors, which is a matter of the highest moment to the continued advancement, comfort, and well-being of our public asylums, the Inspectors justly say:—

"Of the present system of management through governors, subject to certain modifications, on the whole, we cordially approve, believing that gentlemen of education, rank, and position, whose acquaintance with fiscal affairs, and personal interest in the well-being of the country, afford the best guarantee for the due and economical expenditure of its rates, are the most suitable persons to appreciate the peculiar claims of the insane on the benevolence and liberality of the public, as well as from the fact, to which we can personally bear the most gratifying evidence, that a question of party or religion was never mooted within the walls of an Irish Asylum."

The necessity for condensing the laws relating to lunacy in Ireland closes the Report of the Inspectors, and is thus well put before the Executive:—

"With regard to the subject matter contained in the seventeen existing Lunacy Acts, if codified and properly amended, they could easily be compressed into three: the first having reference to lunacy generally and to public lunatic asylums; the second, to private licensed houses for the reception of the insane; and the third, to a distinct legislation for criminal lunacy, and the custody of persons

acquitted on the ground of insanity, or of those whose reason may become affected before or after trial. As the present Acts stand, they are very vague on many points—a fact best illustrated by the various opinions given on the same question, not only by different, but occasionally by the same legal authorities.

"A series of rules and regulations, based on the Statutes, was passed by order in Council fourteen years ago. Though sensible that many of them, however suitable at the time, are not adapted to the existing state of our lunatic institutions, while awaiting that general and better system of legislation already suggested by us to the Executive, we forbore urging minor details which, in due course, should be the result of a comprehensive legal enactment."

The Report of the Inspectors, on the present occasion, is subscribed by Dr. Nugent "for self and colleague," with the following explanatory note, in delicate and complimentary reference to his late amiable and highly respected coadjutor, Dr. White:—

"It is with feelings of sincere regret I have here to state, that during the last six months, included in the period of this Report, the Lunatic Asylums Office was deprived of the experience and assiduous attention of my respected colleague, in consequence of a severe accident which occurred to him when on a tour of inspection. The professional character of Dr. White is duly appreciated by the public; for me, a friend who valued his private worth, it only remains to add, that the uniform kindliness of his manner simply indicated the benevolence of his disposition."

We must not ourselves let Dr. White retire into private life without deeply and sincerely sympathizing with him on account of the deplorable accident which compelled him ultimately to resign his office as the Senior Inspector of Hospitals for the Insane in Ireland. Nor must we let this opportunity pass without recording the truly honourable and courteous manner in which he invariably acquitted himself of his important and confidential public duties. We feel quite satisfied that we are only expressing the unanimous voice of the medical and other officers of the Irish asylums when we say so. In him the several officials referred to had a warm, genuine, and firm friend and adviser,—one who was ever ready to promote the interests and smooth the difficulties of those with whom he came into official contact, and over whom he exercised the control with which he was vested in a manner so perfectly just and fair as to make his retirement to be most deeply lamented.

Having made the above justly merited reference to Dr. White, a sense of imperative duty compels us here also to make a passing allusion to Dr. White's lately appointed successor.

Of that gentleman, either personally or professionally, nothing but what is highly to his credit could be stated; and he is held in much and deserved estimation by those members of the profession to whom he is known. But he will forgive us when we respectfully tell him that his qualifications for his present office are unknown to psychologists, or in the domain of psychology. The Act of Parliament is express in declaring that the Inspectors shall be "duly qualified and experienced persons," which of course means that a practical knowledge for the office had been duly acquired. It is, however, the Executive, who conferred an admittedly important and peculiarly delicate office upon an entirely unqualified party, which is to be held responsible for the act. Besides, great injustice was done to those who had become fitted by their previous pursuits for the office in question, and who naturally expected that the vacant situation would have been bestowed upon one from their ranks, and great discouragement to them has consequently been the result. The Earl of Clarendon distinguished his Viceroyalty towards the district asylums by adopting it as a fixed rule that according as vacancies occurred in them, of the so-called office of "Manager," none but members of the medical profession should for the future be appointed to their charge. What a noble opportunity was lately afforded for Lord Carlisle also signalizing his Viceroyalty, in regard to those important institutions, by his Excellency selecting a resident physician for the office in question. Had he done so, he would only have been following the good example shown in this respect, on two occasions, by the English Lord Chancellor, who appointed as Commissioners in Lunacy those who had been superintendents of county asylums. And just recently the same fair system of promotion was adopted in Scotland. It is to be trusted, however, that the present appointment will be the last that will be thus reprehensibly conferred, and that for the future the office, both here and in the sister countries, will be regarded as only the due and legitimate promotion of the medical superintendents of our public asylums, just as much as in the army the subaltern rises by regular promotion to the rank of a field-officer. This is no new view of ours on the above subject, as may be seen by referring to the third "Annual Review on Insanity and Hospitals for the Insane," which appeared in the pages of this Journal in November, 1852, and from which we here reproduce the following passage as bearing on the matter at issue :—

"From long consideration of the subject, we have come to the conclusion that the inspectors of asylums should be chosen from

amongst the physician-superintendents. A small matter of reward this for them to look forward to, but in all common justice this promotion should, as a paramount right, go in the corps. It would act as a wholesome stimulus, and indirectly elevate their status; and for the performance of duties so confidential and peculiar in themselves, is it not plain that they, and they alone, are the fittest persons to be appointed to such an office? The late Lord Cottenham, when Lord Chancellor, admitted the principle. He appointed the Medical Superintendent of a County Asylum to be one of the paid Commissioners of Lunacy in England, and this despite of being pressed by the second highest personage in the realm to bestow the office on another, an eminent physician, but who was not 'duly qualified and experienced' in the treatment of the insane"[a].

We have only left ourselves room to say, in further reference to the Inspectors', or rather Dr. Nugent's, Report, with which we have endeavoured to grapple in its most salient features, that it is enriched with a copious and elaborate set of appendices, in which are tables and returns containing the fullest information, statistical and otherwise, upon every conceivable point of detail in connexion with the several district, central, and private asylums in Ireland. Indeed, the Report is quite a model one in this and its other features, and reflects the greatest credit upon Dr. Nugent and the official staff of the Lunacy Department in Dublin Castle, one and all of whom must have spent much time and toilsome labour in reducing these varied tables to their present readable and most complete, as well as suggestive form. We are only surprised how any pretext whatever could have been discovered, when such a department as this was in full operation in the Castle of Dublin, for the appointment of a special Commission of Inquiry in regard to our asylums, when every possible information that could have been required respecting their daily working must have been here at the immediate command of the Government. But we are so accustomed in the present day to roving Commissions of every sort and hue that the wonder would be how even the asylums managed to escape their kind and fostering care! Dr. Nugent, it is only justice to him to say before we conclude this notice, has earned for our asylums a very high status by the great attention he has paid to their working, and the efforts he has always made, and with the best effect, too, to have full justice done, more especially to their immediate responsible officers, the resident superintendent physicians. We are astonished, we may here state, and as has been already pointedly noticed by some contemporary professional journals, how

[a] Vol. xiv. page 401.

it comes to pass that the English Commissioners receive salaries of £1500 per annum each, with liberal travelling expenses besides, and for duties not a whit more onerous, if so much so, as are performed in Ireland by our own Commissioners, whose salary is not much above one-half of what their brethren in England are paid. We think this bears unmistakable injustice on its very face, and ought to be remedied in the proper quarter.

2. The Eleventh Report of the Commissioners in Lunacy in England is a Blue Book of not unpretending dimensions, containing the usual amount of varied official information in connexion with the state of insanity in England and Wales for one year, up to the 31st of March last. A considerable portion of the Report comparatively is taken up with a *re-chauffé* of Mr. Snape's case of the Surrey County Asylum, which, for a bygone affair, as well as for the credit of the Commissioners themselves, we consider very bad taste on their part to have now brought forward again. The Commissioners have, of course, endeavoured to make out the best possible case for themselves, and wipe out the stigma fastened upon them connected with their proceedings for the prosecution of that gentleman,—a prosecution, too, which so signally failed. Their now taking up the subject, after having been finally disposed of by the restoration of Mr. Snape to his position as one of the Medical Superintendents of the above Asylum, looks too much like persecution, and a desire to have the last word in an affair in which most assuredly they neither added to their usefulness as a public board, nor placed themselves in a dignified position before the country. The business altogether was an unfortunate one from beginning to end, and so we shall leave it, only remarking, however, that the attempt now of the Commissioners—who do not profess to be a scientific body of men, or to have had any practical experience in the treatment of the insane and the conduct of establishments set apart for their care, save in one or two exceptions out of their entire number of eleven—their attempt, we say, to lay down rules and regulations for the Medical Superintendents, or to dictate to those really experienced functionaries in the performance of their professional duties towards the patients placed under their charge, savours not a little of presumption, and of too high an estimate of their own ability. The Superintendents, we hope, know their own position, and respect their own independence, better than to pay any attention to this increasing officiousness of the Commissioners.

The Commissioners state, that since their last Report a vacancy had occurred in the Commission by the death of Dr. Hume, a gentleman much respected in his official capacity during the long period he was a Commissioner,—for twenty-nine years,—and that the vacancy so caused had been filled up by the appointment of Dr. Nairne, late Physician of St. George's Hospital. We shall not here stop to discuss the particular qualification possessed by Dr. Nairne for his selection to so important an office as that of one of the Medical Commissioners in Lunacy; common report stated it at the time to be totally unknown; it is, consequently, one of those appointments so extraordinary and unjustifiable from previous deserts, as to make it very palpable that interest overrules merit as freely now as ever. Leaving, then, the "Physician of St. George's Hospital" to enjoy the promotion thrust upon him, we proceed to our proper business, that of making as brief and complete an analysis as possible of the Commissioners' Eleventh Report.

With reference to the provision for pauper lunatics during the last year, it is stated:—1. That a site had been obtained, ground purchased to the amount of 257 acres, and building plans approved, for the erection of an Asylum for the counties of Berks, Herts, and Hunts. 2. That some additional land had been purchased for the Bucks Asylum in order to secure a more adequate supply of water for that institution. 3. That the progress of the Asylum for Cambridgeshire had been resumed, and a purchase made of twelve additional acres of land. 4. That the plans for the proposed Asylum for Cumberland and Westmoreland were in an advanced state for commencing to build. 5. That additional buildings were in progress at the Devon Asylum, in connexion with which it is stated that, owing to the very crowded condition of the establishment, and in order to admit the insane poor of Plymouth, a house had to be taken at Exmouth for the transference to it of forty selected patients from the parent institution, a proceeding which had resulted in the best and happiest effects; though some opposition was given at first to their removal thither, the public mind being alarmed at the poor patients enjoying, in common with themselves, the lovely sea-coast in that quarter,—an alarm, however, for which there was no ground whatever, their conduct having been everything that could be desired, and as only might have been expected when this original idea of thus disposing of them for a season was undertaken at the advice of the able and experienced Physician-Superintendent of the County Asylum, Dr. Bucknill, a gentleman so distinguished

in his specialty, that any recommendation of his must needs be good and worthy of the fullest reliance. The novelty of this plan has pleased us greatly, and its approval and adoption reflected the utmost credit upon the visitors of the Devon Asylum, the Commissioners, and Dr. Bucknill. We hope to hear of an extension of this capital plan of getting out of a difficulty, under similar circumstances, when at all practicable; and further, we trust that the authorities of the Devon Asylum have no intention of giving up this marine residence, only temporarily taken, in the first instance, at Exmouth, owing to the emergency mentioned, but that they will keep it for all time to transfer some of the better classes of their patients to in the summer season,—a break in their monotonous lives which surely could not but be productive of permanent good, and largely help towards increasing the number of cures in the year; besides the hope of getting a share of the enjoyment of the sea-coast residence of the establishment, being an encouragement to good conduct to the patients generally, which would amply repay for any additional expense and trouble there might be in making it part and parcel of their County Asylum, so celebrated for the humane and scientific manner in which its inmates are treated. 6. The Dorsetshire Asylum has had some new and more satisfactory arrangements made in regard to its land, preparatory to contemplated additions to the house itself. 7. The plans for the new Asylum for the county of Durham have been finally approved, which would appear a desideratum, inasmuch as the Commissioners observe that the lunatic poor of that district have hitherto been located in houses, respecting which it has been their duty to report unfavourably again and again, owing to their crowded and grossly defective state. 8. The Essex Asylum has had certain lands appropriated as a burial-ground for the patients and officers dying in it. 9. The Commissioners refer to the unpardonable supineness of the justices of the four counties of South Wales, viz., Cardigan, Caermarthen, Glamorgan, and Pembroke, in respect of their pauper lunatics, pointing out that the existing accommodation was utterly discreditable and insufficient. An appeal had ultimately to be made to the Home Secretary to stir up the humanity of those worthy justices—if any they had—and being thus aroused, and through the fear of the powers of the Lunatic Asylums Act being brought to bear against them, there is some hope now of their unfortunate insane poor being in due time provided with suitable accommodation, but only for three of the four counties at first intended, that of Glamorgan having separated from the others. In our Review last year we

called attention to the same neglect on the part of the authorities of the above counties, which, to have continued to the present time, is far from being creditable to the parties concerned; the Commissioners, however, have at last, it would appear, brought the justices to their senses. 10. The Gloucestershire Asylum, owing to the large increase of its pauper patients, is to be appropriated for the future to pauper inmates only, that portion of it hitherto devoted to private patients it having been agreed to give up, which, it must be admitted, is a most proper reform in its management. 11. The Hants Asylum is to have a new set of workshops erected, it being purposed to convert the old ones into ward accommodation. 12. The Kent Asylum laboured under a deficiency in the supply of water, which is about to be corrected by an improved supply from the river Medway. The building of an additional wing for females has been in contemplation, but remains still under consideration. 13. The Leicestershire Asylum is about having an old wash-house converted into a steward's residence and workshop. 14. Already the Lincolnshire New Asylum requires enlargement, and plans have been approved for the same by the Secretary of State. 15. We regret to find, with regard to Colney Hatch and Hanwell Asylums, the two *Behemoth* establishments for the pauper lunatics of Middlesex, are about being converted into asylums of the Mammoth character, by enlarging the former, so as to admit 713 *additional* patients, and that of Hanwell to receive 600 more. On the 31st of December, 1856, Colney Hatch had, we find, within its walls the enormous number of 1249 inmates, of whom but 91 were considered curable; and Hanwell had on the same date 1013, so that these contemplated additions will crowd under the one roof in Colney Hatch so many as 1952, and in Hanwell an aggregate number of 1613, or, both together, 3565 of these afflicted beings! In our Annual Review for 1852[a] we raised our humble voice against the humanity and prudence of those "Leviathan" receptacles for the insane, as contrary to the received opinions of the most expeperienced and practical men of the day; and now we are glad to find that the Commissioners themselves advocate the very same views as we propounded, they objecting in the most decided manner to any further additions to the above Asylums; but unfortunately their well-founded and well-put objections have been unsuccessful, and instead of another asylum at least being erected for Middlesex, for the humane accommodation and

[a] See vol. xiv. p. 405, No. 28, N. S.

treatment of its pauper lunatics, the plan now indicated is to be the one adopted. On this most important question we think it right to quote in full the views of the Commissioners, which we consider sound common sense, and deserving of the gravest consideration:—

"It has always been the opinion of this Board that asylums beyond a certain size are objectionable. They forfeit the advantage which nothing can replace, whether in general management or the treatment of disease, of individual and responsible supervision. To the cure or alleviation of insanity, few aids are so important as those which may be derived from vigilant observation of individual peculiarities; but where the patients assembled are so numerous, that no medical officer can bring them within the range of his personal examination and judgment, such opportunities are altogether lost, and, amid the workings of a great machine, the physician, as well as the patient, loses his individuality. When to this also is added, what experience has of late years shown, that the absence of a single and undivided responsibility is equally injurious to the general management, and that the rate of maintenance for patients in the larger buildings has a tendency to run higher than in buildings of a smaller size (a fact which will be sufficiently apparent by reference to a return, printed in Appendix CC of the Average Weekly Cost for Maintenance, &c., in the several County and Borough Asylums during 1856), it would seem as if the only tenable plea for erecting them ought to be abandoned. To the patients, undoubtedly, they bring no corresponding benefit. The more extended they are, the more abridged become their means of cure; and this, which should be the first object of an asylum, and by which alone any check can be given to the present gradual and steady increase in the number of pauper lunatics requiring accommodation, is unhappily no longer the leading characteristic of Colney Hatch or of Hanwell. Built originally at great cost, as hospitals for treatment and relief, they have been gradually in course of conversion into permanent places of refuge for a too large proportion of cases, as to which the chances of relief are few; and while such cases have accumulated in them, there has been an almost total exclusion of those more recent, which by timely medical care therein might never have contributed, as they now so largely do, to the permanent burdens on the rate-payers. This growing evil was remarked upon by the Medical Officer of Hanwell so long as twenty-three years ago; and out of the 1019 patients in the same institution at the close of last year, in 26 only had the disorder been of less than one year's duration, and in 17 of less than two.

"When, therefore, in March and April of the past year, the Committees of Colney Hatch and Hanwell submitted, through the Secretary of State, plans for enlargement of both Asylums, designed solely to provide for increased numbers, without regard to a selection of cases, we urged very strongly the reasons which existed

against that proposition. The object being to provide accommodation for 713 additional patients at Colney Hatch, which would then contain nearly 2000 inmates; and for 600 at Hanwell, which would bring its total numbers up to 1620,—the time had arrived to express plainly the opinion that the desirable limit in both institutions had already been exceeded; that an increase of size in either would be most prejudicial; and that no such proposal ought to be sanctioned. The additional restriction which would thereby be placed upon the curative resources of both establishments was a reason, if none other had existed, decisive against it. No principle has been oftener laid down by this Board, because none is found more essential in the treatment of insanity, than that of not sanctioning the congregation, in one place, of numbers too large for the extent of ground to which necessarily their accommodation must be limited. Even at present, the land attached to Hanwell and to Colney Hatch is in both cases inadequate, and to add to the population of either, without the possibility of extending the land at its disposal, would be to abridge very seriously the means of relief and cure. At Colney Hatch (with 138 acres, and 1960 patients) the proportion would not be more than one acre to fourteen patients, and from even this must be deducted the wide area covered by the buildings; whilst at Hanwell (with 84 acres, and 1620 patients) it would be, without allowing for a similar drawback, not more than 1 acre for 20; and such spaces would be greatly too limited to afford the proper and healthful opportunities of exercise and employment indispensable to any due treatment of the insane. It became our duty, in these circumstances, to revert to the causes out of which the necessity for enlargement had arisen; and as it had been by accumulation, in these costly Asylums, of cases belonging rather to the incurable than the curable kind (and particularly of idiotic and demented cases), that the existing buildings had become inadequate to the objects which alone might justify the cost of the erection,—we now pointed out that the proper remedy could only be found in separating, as far as possible, such cases of a harmless character from the more recent and more certainly curable. When, in 1831, Hanwell was built for 500 patients, it was supposed to be large enough to meet all the wants of the county. But, two years later it was full; after another two years it was reported to contain 100 patients more than it had been built for; after another two years it had to be enlarged for 300 more; and at this time (Colney Hatch having been meanwhile constructed for the reception of 1200 lunatic paupers belonging to the same county) Hanwell contains upwards of 1000 patients. Colney Hatch was opened in 1851; within a period of less than five years it became necessary to appeal to the ratepayers for further accommodation; and the latest returns show that, at the close of 1856, there were more than 1100 pauper lunatics belonging to the county unprovided for in either of its Asylums. These facts point to a plain and unavoidable conclusion. Making all allowance for the actual spread of the disorder, and also

for the advantage not unlikely to have been taken of such asylums to find room therein for patients not absolutely paupers, it does not admit of any reasonable doubt that both buildings have been too much crowded with inmates who ought not to have been sent to either; and that, instead of continuing to be used as hospitals for the treatment, these expensive structures are in danger of being turned into mere houses for the safe custody of the insane. Hardly had they been built, when into each the workhouses sent such large numbers of chronic cases, as at once necessarily excluded the more immediately curable until the stage of cure was almost passed; and the doors of both establishments became virtually closed, not long after they were opened, to the very inmates for whom only it was needful to have made such costly provision. Manifestly, therefore, the remedy now was, not to exaggerate the mistake already committed, by additions on the same costly scale for purposes to which they would be as inappropriate; but, by a fresh classification and redistribution of the patients, not only to deal with existing evils universally admitted, but to guard against a recurrence of evils exactly similar, by restoring to both Asylums their proper functions of treatment and cure. It had become not more matter of justice to the lunatics themselves than of consideration for the ratepayers, to urge that the additional accommodation required, being for classes of patients as to whom, for the most part, small hope of cure remained, might be supplied in an asylum much better suited to them, and of far less costly character; and the immediate erection of such an asylum, without the expensive arrangements and appliances needful to the active treatment of such cases, was strongly pressed, by letter to the Secretary of State, upon the Committees of Hanwell and Colney Hatch. The suggestion, however, failed to meet with favour from the Committees; and the discussion of the various questions raised having been continued during the greater part of the year, the Secretary of State suggested a personal conference between the Commissioners and the Committees on the principal points of difference; but on the proposed meeting taking place in December last these proved to be not reconcilable, and the Commissioners reluctantly gave way. Reserving to ourselves the right, at all proper seasons, of restating and justifying our preference for a third and more simple structure, we found it necessary to defer to the very decided conclusion in favour of enlarging the existing buildings at which the Committees had arrived, to which the Court of Quarter Sessions had assented, and which a majority of the ratepayers had been found to approve. From that time our Board has ceased to insist on what we saw to be impracticable, and we can only entertain the hope that means may be found to render the modes of enlargement in both instances as efficient as the circumstances may yet allow. The degree of such efficiency will be the measure of the shorter or longer period for which the necessity of building a third asylum may still be averted."

16. In continuation of the Commissioners' separate observations upon the public asylums, the next we find noticed by them is the Norfolk establishment, so notorious for the harsh conduct of its visiting justices towards a former Medical Superintendent, which we, at the time, specially referred to[a], and its being behind the age in the general management pursued towards its inmates. We are left quite in the dark whether or not any reform, which was so much needed, has yet taken place in this Asylum, it being merely now stated in regard to it, that, with the view of "providing increased accommodation for the lunatic poor, plans for its intended enlargement were still under consideration." An ominous silence, we may also remark, was observed towards this Asylum in last year's Report, in which all the information given by the Commissioners was:—"That about three acres of land had been purchased by the visitors, which enabled them to divert the turnpike road which formerly passed close to the Asylum." We are left, then, completely to draw our own conclusions in respect of its conduct, and what those are we think it quite unnecessary here to record. 17. The Justices of the Northampton Asylum, not having taken the course prescribed by the Legislature in reference to their patients, have drawn from the Commissioners a threat of objecting to the renewal of the existing agreement with them for the maintenance of the Northamptonshire patients.

18. The Asylum at Nottingham is having erected a new chapel. 19. Fourteen acres of additional ground have been agreed to for the use of the Salop and Montgomery Asylum. 20. Plans have been approved for the erection of a new Asylum for the joint use of the Eastern and Western Divisions of the County of Sussex, at Haywood's Heath. 21. The new wings to the Asylum for the North and East Ridings of Yorkshire having been completed, additional land to the amount of fifty-three acres has been obtained, the Commissioners remarking that this is the second purchase of additional ground for this institution, which originally provided the liberal scale of eighty-nine acres to 303 patients. This Asylum, it should be observed, is always prominently put forward for its profitable more than its curative results, the former appearing to be the primary consideration in its management. 22. The West York Asylum at Wakefield is having additional buildings for laundry purposes attached to it. This concludes our summary of the state of accommodation for lunatic paupers in the counties

[a] Vol. xviii. No. 36, p. 389.

and boroughs, establishments of which the Commissioners speak favourably, observing, that they have "progressed during the past year more considerably than for several years preceding."

We are happy to find that, even at the eleventh hour, the Government has resolved to provide, without any further delay, "a new State Asylum for the accommodation of 600 criminal lunatics, and that active measures are now in progress for the selection of a suitable site."

We cannot but think that it is most discreditable, upon the part of the Government, that the soldiers of our country, who fight our battles and enable us at home to live in peace and security, should, in this age of advancement, be left unprovided for by the nation, when, unhappily, they have been afflicted with insanity. This is really disgraceful, and should be held up to public odium, that the authorities might be thus forced to do justice to our brave defenders when they become the subjects of this lamentable disease. The wretchedly mean and parsimonious plan now in operation towards the insane soldiers is, the Commissioners scathingly state—

"To endeavour, in the first place, to ascertain the settlement of a soldier when first attacked with insanity, and, if it can be discovered, to transfer him to the parochial authorities. Failing this, he is retained under the charge of the War Office, and is farmed out to the proprietor of a licensed house. Such only is the kind of care now bestowed on soldiers when attacked with insanity. The commodious building from which they were lately removed remains empty; *and they are crowded into a private one, in the vicinity of the metropolis.*"

We have used the italics here ourselves to make, if possible, this mild rebuking language of the Commissioners still more pointed. Our country should at once take measures to remedy this inhuman neglect towards insane soldiers.

The Commissioners, after referring pretty fully to the state of the licensed houses, and making some remarks upon the value of open-air exercise and employment, point to the importance of offering a liberal remuneration to those in immediate attendance upon the insane, observing, that in many asylums the scale of payment was gradually increasing, and expressing their hope that such further advances would generally be made as to insure ultimately the services of only the most competent and trustworthy persons. In some asylums (as at Hanwell), a small sum of money is allowed to defray travelling expenses on the occasion of a leave of absence, which we can only say is very creditable, and that so good and liberal an example is

well worthy of being the rule, and not the exception, in all similar establishments, in which the duties are so onerous and unceasing as to deserve the most liberal reward and indulgence in every possible and reasonable way.

The Report of the Commissioners, on the present occasion, is much richer in professional statistics, &c., than their last: certain deficiencies which we then called attention to are not to be found in this issue.

We have only room for the following "summary," in addition to what we have already given from this Report of the Commissioners, which, it is only justice to state, is, on the whole, a very complete and ably drawn-up public document:—

Summary of Patients of all Classes.

		Deemed curable.
In County and Borough Asylums, . .	14393 . .	2070
Hospitals, ...	1742 . .	340
Metropolitan Licensed Houses, . . .	2578 . .	390
Provincial Licensed Houses, ...	2598 . .	527
	21311	3327
Deemed curable, ...	3327	
Deemed incurable, ...	17984	

3. The Report of Her Majesty's Commissioners on the Lunatic Asylums in Scotland is a production which, for great ability and quantity of material, may, without the least fear of comparison, be placed in juxtaposition with any Blue Book that has seen the light for a lengthened period. The Report itself contains 257 pages, which, however, is but trifling when compared with its accompanying massive volume, entitled, "Appendix to the Report," so many as 531 pages being devoted to it, exclusive of an index of fifty pages. To judge from these results of their perfected labours, the work which her Majesty's Commissioners had to perform must have been gigantic, for it would be a herculean task for any one to undertake a full perusal of these tomes. For ourselves we must be content to do little more just now than to notify to our readers that such a literary production devoted to the cause of the insane is in existence, and that when they have a leisure, of three months at least, to spare from other and more important duties, they can fall back upon this elaborate Scotch Report. Immediately upon the appearance of this voluminous work the public mind was horrified with the dread nature of what it was said to

contain, and certain extracts were carefully culled from it for the benefit and edification of the general community, with such notes and annotations as the caterer for the public of these excerpta considered would best suit. No doubt, the condition of Scotland's pauper insane was far from what it ought to have been, and was justly expected to be, in that enlightened and humane portion of her Majesty's dominions. But it is only fair to state, that the seven chartered public asylums of Scotland bore the test of a most rigid inquiry and personal examination on the spot. On the plan of the Commissioners, each of those seven Asylums, viz., the Aberdeen, Dumfries (Crichton), Dundee, Edinburgh, Glasgow, Montrose, and Perth, affording the fullest evidence of being conducted upon the most humane and scientific principles, one and all of them being presided over by resident physicians of indisputable professional eminence, skill, and experience. It was more especially in the licensed houses, poor-houses, &c., that abuses of a grave character were perpetrated towards the unfortunate insane patient, and this distinction not having been properly made, together with the wholesale and indiscriminate condemnation of the treatment of the insane generally, led the public to believe that there was nothing but neglect, mismanagement, and cruelty in vogue throughout the length and breadth of North Britain in regard to the mentally afflicted of that country. Having said this much, we may observe that the Commissioners entered upon their onerous duties very systematically and with great tact, acquitting themselves of their important trust with the utmost amount of ability and judgment, together with extreme impartiality. On that Commission was a gentleman of the greatest practical experience, one who had been a medical superintendent himself for many years of a large county asylum, and thus was this Commission well prepared to undertake the arduous work they were deputed to perform. We have every reason to believe that the Report before us was brought out in the able and comprehensive form in which it has appeared by that gentleman's eminent fitness for so delicate and responsible a task. The name of Mr. Gaskell is quite sufficient to obtain the fullest confidence for the Report which emanated from the Commissioners, and to guarantee to the public that the inquiry which was instituted could not have been placed in better or more competent hands. The Report proper embraces the following principal heads:—

1. Abstract of the law of Scotland in reference to lunatics.
2. Number and classification of the insane.
3. Distribution of the insane.

4. Existing accommodation for the insane.
5. Conditions of the asylums and other establishments for the insane in Scotland.
6. Condition of the insane not in establishments.
7. Mode in which the law is administered.
8. Recapitulation and suggestions for future legislation.

The above will show the very enlarged and business-like manner in which the Commissioners entered upon their duties, and our only regret is, that on the present occasion we are quite unable to quote from their Report as it deserves and we would desire. Its varied contents will afford much valuable information to all interested in the cause of the insane, and the fact that it has already been the means of procuring for Scotland the enactment of a comprehensive legislative measure for the due care and treatment of the insane classes of her population, cannot but be a cause for much exultation to every feeling mind, and to none more so than to that disinterested and enthusiastic lady, Miss Dix, of America, to whose philanthropic visit of inquiry, two years ago, as to the state of the insane in these countries, especially in Scotland, is to be mainly, if not entirely, attributed the sending out of this Commission, and thus to succeed in attaining a compulsory measure of justice for the insane generally of that country, in regard to whom the local authorities had been so apparently indifferent. In cursorily glancing at the Commissioners' Report, we find that the total number of the insane in Scotland is as follows:—

Under special protection of the law, ...	3328
In poorhouses, but not under sheriff's warrant, .	253
With relations or strangers, or living alone, . .	3798
In unlicensed establishments, ...	24
Total, . . .	7403

Of the above the proportions as to sex are—males, 3736; females, 3667; total, 7403. As to species of disease:—Lunatics, 4800; congenital idiots, 2603 = 7403. As to social position:—Paupers, 4642; private patients, 2732; criminal lunatics, 29 = 7403. And as to curability or otherwise:—Curable lunatics, 768; incurable lunatics, 4032; congenital idiots and imbeciles, 2603 = 7403.

The proportion of pauper lunacy in Scotland, it appears from a very accurate and extended examination, made by the Commissioners into this important point, is 1·351 for every 1000 of the population. With respect to the mooted question of insanity being on the increase, the Report states on this

head, that as relates to Scotland the inquiries instituted did not afford the means of deciding, but that means were at hand for stating "that civilization, which leads to an improved condition of the people, is not productive of insanity," which is so far consolatory.

As regards the licensed houses, the Report observes:—

"The condition of pauper lunatics, in several of the licensed houses, is most unsatisfactory. No doubt, there are some private asylums, in which the treatment of the patients is conducted on humane and enlightened principles; but the facts we have quoted show that many of these establishments require to be fundamentally reformed."

Amongst some excellent observations contained in the Report, under the head of "The Treatment of Insanity," it is stated, and with much truth,—

"That, according to the experience of well-conducted asylums, the probability of recovery, in cases received within three months of the commencement of the first attack, is as four to one, and when there is no serious complication of bodily disease, is even as nine to one. But so much is timely treatment essential to success, that where more than twelve months have elapsed since the commencement of the disease, the probability of recovery falls one in four.

"But the fact that a patient has been for years afflicted with insanity cannot be permitted to stamp him as certainly incurable; for we have instances of restoration to reason after the lapse of more than twenty years of mental derangement. There are certain cases indeed, such as those in whose brains structural alterations have taken place, where recovery is utterly hopeless; and many such patients, as well as congenital idiots, may with propriety be placed in institutions conducted in a manner less expensive than is rendered necessary by the object of a curative institution. Still, we must remember that there are many insane, who, though their recovery is hopeless, are, nevertheless, capable of making themselves useful and of deriving enjoyment from existence. At all events, their heavy lot may be alleviated by kind and judicious treatment."

The following paragraph, in regard to the size of asylums, is of great importance at the present time, and worthy of the best attention:—

"We would prefer moderate-sized and economically-constructed asylums, placed in convenient localities throughout the country, to large central establishments. We are convinced that this course would prove advantageous to rate-payers as well as to patients; for, if we are correct in our assumption, that three-fourths of the patients who are submitted to early treatment recover, of whom the greater

proportion would continue insane, if left uncared for, it is self-evident that true economy would counsel placing them at once in asylums."

We find that we must here conclude with this necessarily brief review of the Commissioners' Report, by giving as annexed their "suggested remedies" for the better management and treatment, in future, of the insane in Scotland, which are excellent in their way; and in now leaving the Report we must again record our opinion of its being a very valuable production of the Commissioners' labours, who in its entire compilation have shown no small amount of indefatigable zeal and great ability, coupled with a master-hand in its whole arrangement.

"It is admitted by all whom we have interrogated, and appears as the result of our inquiries, that the system now in use in Scotland, in respect to the insane, is most unsatisfactory, and that it does not afford any sufficient protection to the lunatic. It is evident that, instead of judicious care and treatment for the cure of the disease, safe custody is the object principally held in view by parochial and other authorities; and the above brief enumeration of the practices pursued in reference to the insane clearly indicates that remedial measures are urgently demanded. We, therefore, in conclusion, desire to state our opinion that all the existing statutes relating to the insane in Scotland should be repealed, and a new and comprehensive code framed to meet the many pressing wants of the community, embracing the following provisions:—

"1. The erection of district or county asylums for pauper lunatics, including accommodation for the insane belonging to the labouring classes, who are not strictly paupers. Likewise, more suitable accommodation for criminal lunatics.

"2. Means for insuring greater caution and discrimination as regards the licensing of houses for the reception of the insane; for imposing some check upon the licensing of new houses, and for conferring powers to close those already opened for paupers, so soon as public asylums shall have been erected, or at any other time, if not properly conducted.

"3. Regulations by which all pauper lunatics, not in asylums, shall be brought under proper visitation and care, and periodical reports be made as to their condition by medical men; so as to afford a safeguard against abuse and ill treatment, and secure the ready and careful transmission of all proper cases to asylums.

"4. An accurate definition of the powers and duties of sheriffs, in reference to the insane, so as to secure a more uniform practice and united action against them.

"5. Rules for the guidance of the board of supervision, parochial boards, inspectors of poor, and district medical officers, in all matters relating to the management of the insane.

"6. More complete regulations in reference to medical certifi-

cates; to prevent interested parties signing them; to specify the length of time the document shall remain in force; and to require a statement of the facts or evidence upon which the opinion as to the patient's insanity is founded. Also a limitation of the time during which the sheriff's order shall remain in force, previous to the admission of the patient, and also in case of escape.

"7. The formation of a complete system of schedules and returns, together with full records of all admissions, discharges, deaths, and accidents. Also the institution of registry and case-books, showing the medical treatment pursued in each case, and whether and to what extent restraint and seclusion were employed.

"8. Comprehensive regulations applicable to licensed houses and poorhouses, while continuing to receive lunatics; for securing to the patients sufficient medical and other attendance, kind and appropriate treatment, proper diet, clothing, bedding, exercise, and recreation; and adequate means of religious consolation.

"9. A requirement that, on recovery, patients shall be discharged by the medical attendant of the establishment.

"10. Restrictions on the removal of pauper patients by inspectors before recovery.

"11. Precautions for preventing injustice in transporting aliens.

"12. Better regulations as to dangerous and criminal patients.

"13. Measures by which persons labouring under insanity may voluntarily place themselves under care in an asylum.

"14. Special regulations for prolonging control over cases of insanity arising from intoxication.

"15. Enactments for extending further protection to the property of lunatics, and for insuring the proper application of their funds.

"16. The imposition of suitable penalties for infringement of the law, and power to modify them according to circumstances.

"17. Powers to raise sufficient funds for the purposes of the Act.

"18. The creation of a competent Board, invested with due authority, and to whom the general superintendence of the insane in Scotland shall be intrusted; including powers to license houses for the reception of the insane; to visit all asylums, licensed houses, poor-houses, and houses containing only single patients; to order the removal of patients to or from an asylum, or from one asylum to another; to give leave of absence to convalescent patients; to regulate the diet in asylums and licensed houses for pauper patients; to make regulations for their management, &c., &c.; with direction to report to the Secretary of State for the Home Department.

"19. The formation of local boards for the management of individual asylums, who shall act in conjunction with the general board."

4. We have before us the several quarterly Numbers of the "Journal of Mental Science" for the current year, in each

of which we find papers and contributions replete with the most valuable and practical information, in connexion with the important specialty of that department of the medical profession of which it is the official organ, "The Association of Medical Officers of Asylums and Hospitals for the Insane."

The Number for January contains, amongst several other original communications, the conclusion of "The Diagnosis of Insanity," by Dr. Bucknill, the very able editor of the Journal, which, as might be expected from such a pen, is thoroughly practical and deserving of attentive perusal. We have also in this Number an excellent article written by Dr. Kirkman, the eminent Resident Physician, for a quarter of a century nearly, of the Suffolk County Asylum; its title being, "The Divine and the Physician," and in which he takes severely to task, and not less severely than deserved, the Rev. Henry Melvill, for some striking observations, it appears, he made on the subject of madness, in a sermon preached by him from Eccles. ii. 2:—"I said of laughter, It is mad; and of mirth, What doeth it?" and entitled, as published in the Pulpit, "The Wit and the Madman." Mr. Melvill, in this published discourse of his, is charged by Dr. Kirkman with giving utterance to unsound interpretation and unsound philosophy, both of which charges Dr. Kirkman, with much acumen, but still in an eminently Christian spirit, brings with great force against that reverend gentleman.

Dr. Monro, "On the Classification of the Forms of Insanity," and Dr. Tuke, "On the various Forms of Mental Disorder," are both good and sensible papers also in this Number. In the issue for April, Dr. Bucknill appears in his usual vigour of style "On the Pathology of Insanity," which is written with much soundness and ability; Dr. William Wood, "On the Establishment of a State Asylum," which he satisfactorily proves to be pressingly necessary; Dr. Boyd "On Epilepsy," very practical, as all Dr. Boyd's writings are; and "Asylum Architecture and Arrangements," by Dr. Bucknill, a paper deserving of being carefully read by all in charge of asylums. In this Number is brought forward the case of Mr. Millar, lately the Medical Superintendent of the Bucks Asylum, in which the Committee of Visitors of that institution appear in a most tyrannical character, nearly as bad, if not entirely so, as the Norfolk Asylum Justices in the case of Dr. Foote,—both gentlemen having been dismissed from their situations in a manner at once oppressive and unjustifiable by the visiting justices. The editor of the Journal, with much truth, states that the visitors failed "to make out any case against Mr. Millar's character." Their conduct

towards that gentleman is about the most arbitrary and high-handed that can well be imagined, and very conclusive that the local authorities in England should not be intrusted even with the appointment of the inferior, much less the superior, officers of the public asylums. The July Number, like its precursors, is rich in excellent and practical papers by Dr. Noble, Dr. Tuke, and Dr. Blount; besides having several reviews in connexion with asylums, &c.; and the medical evidence in Mr. Snape's case. The last Number is the one for the current quarter, which contains for its opening paper a full and interesting report of the late annual meeting, held in London, of the Association, which was very largely and influentially attended, and at which Dr. Hitchman, the retiring President, made an eloquent address, chiefly in reference to the case of Mr. Millar, which had been strongly, and with much unanimity taken up by the Association, the visitors of the Bucks Asylum being most completely convicted for their injustice towards that ill-used gentleman; in support of whom the Commissioners in Lunacy, Dr. Hitchman stated, had come forward and given public testimony to the value of his services and the creditable state of the Bucks Asylum during the period of his superintendency. To us the conduct of the Bucks visitors in respect of Mr. Millar, appears both incomprehensible and discreditable. We sympathize deeply with Mr. Millar, and heartily join in the denunciation of his brethren against the tyrannical conduct of the so-called Bucks Justices. Dr. Winslow, the incoming President of the Association, delivered a very able address, in the course of which he made some excellent observations upon the rights and privileges of those devoting themselves to the practice of psychology.

In this number we have Dr. Bucknill's paper on the "Pathology of Insanity" continued with unabated interest and practical worth; the other contributors are Dr. Tuke, "On the Treatment of Insanity when refusal of food is a prominent symptom," which was read at the Association meeting; the same author, a paper entitled, "Does Civilization favour the generation of Mental Disease?" (a question which the Scotch Lunacy Commissioners, it will be seen in our Review of their Report, answer in the negative); and Dr. Noble, "On the Use of Opium in Insanity."

A Report of Dr. Huxley, the very able Superintendent of the Kent Asylum, to the Committee of Visitors of that institution, "On the plan of getting out patients at night to keep them from soiling their beds," appears in this Number, which we have attentively read, but which the editor states that he

"unwillingly publishes, on account of the reflections it contains upon a gentleman whom he greatly respects," meaning Mr. Gaskell, one of the Commissioners in Lunacy, and for whom we also feel the utmost respect; yet notwithstanding all this, and fully agreeing in opinion with the editor that "Mr. Gaskell is no carpet knight in the ranks of psychology," yet after some twenty years and upwards spent in the treatment of the insane, we will be candid enough to say—with every deference to Mr. Gaskell and the editor—that we are quite of Dr. Huxley's opinion in believing it to be next to an impossibility to prevent dirty patients from soiling their beds, no matter the frequency with which they may be taken up during the night, and the doing of which causes so much irritation to them, and disturbance to others, without any commensurate good result.

The recent appointments of Commissioners in Lunacy in the three kingdoms has called forth the following just criticism from the editor:—

"*The New Commissioners in Lunacy.*—We would fain have avoided the invidious task of commenting upon these appointments; but the indignant letters we have received from members of the Association inform us, that it is our imperative duty to express our entire disapproval of the principle, or want of principle, upon which the choice of the Government has been made. The appointments of Dr. Nairne, Dr. Hatchell, and Dr. Coxe, have been a heavy blow and a great discouragement to all medical men practising in lunacy, and especially to the class of asylum superintendents,—men who upon small stipends devote their lives to onerous and harassing duties, in the hope that some day they may draw one of the legitimate prizes of their professional career. The whole class of asylum superintendents justly feels injured and insulted by being placed under the authority of strange medical men, who have never borne the heat and burden of the day, who have no claims for such preferment, and who, practically ignorant of the responsibilities entailed in the management of asylums and the treatment of the insane, must come for what instruction may suffice them for an apparently decent discharge of their duties to the very men whose rightful position they have usurped. How can Commissioners who have never resided for twenty-four hours in a lunatic asylum appreciate the difficulties which occur there? How can they distinguish between unavoidable misfortunes and reprehensible faults? How can men instruct who have never learnt? How can men direct the most difficult of labour who have never submitted to work?

"It is fair to say, that in Dr. Nairne's appointment no false pretence was made to knowledge which he did not possess. We are informed that he takes great credit to himself for bringing to the Commission a freedom from prejudice, derived from his primitive

innocence in all that relates to asylums and the insane, as if ignorance were the parent of impartiality. Dr. Hatchell's appointment, on the other hand, has been defended by the most Irish attempts to make it appear that he does possess experience in the treatment of the insane; attempts which admit the principle that experience is needful in an Inspector or Commissioner, and which by inference condemn the recent appointments. On the 21st of July Mr. Cairns, the Member for Belfast, put a question to Government in the House upon this point. He asked whether the report that Dr. Hatchell had been appointed Inspector of Lunatic Asylums in Ireland was correct, and if so, whether Dr. Hatchell had had any, and what, experience in the management of lunatic asylums, and the treatment of the insane. On behalf of Government, Mr. Herbert replied that the report was correct, and that Dr. Hatchell had never been connected with any lunatic asylum in any official capacity; but, that as Surgeon to the Irish Constabulary, which office he had held for nine years, he had had frequent opportunities of inspecting and treating lunatics. He had also, twenty-four years ago, been educated at Steevens' Hospital, which was in connexion with Swift's Lunatic Asylum, where he might have had ample opportunities of observing the treatment of lunatics. On such grounds every medical man who has been educated at Guy's Hospital has a claim for an appointment on a Lunacy Board, since there is a lunatic asylum in connexion with the hospitals, into which, however, we believe, the hospital students rarely or never enter. We are sorry to hear that insanity is so prevalent among the Irish constabulary, but why did Mr. Herbert omit to mention another possible source of experience which Dr. Hatchell has possessed? He has been Household Physician to the Lord Lieutenant, who has given him this piece of lunacy patronage, and surely his experience in the Castle ought not to go for nothing, if his experience in the police-station goes for so much. At the last hour, the force of public opinion has interfered with the Government arrangements for the Commission in Scotland, by giving the protegé of the Duke of Argyle an able coadjutor in Dr. Browne, the experienced Superintendent of the Dumfries Asylum. This appointment will give universal satisfaction, except to those corrupt dealers in patronage, who will see in it an emphatic condemnation of their own proceedings."

The last article in this ably conducted Journal, one which reflects credit alike upon the Association and its accomplished editor, who plainly does not spare himself in carrying it on vigorously and effectively, is a reprint of a State document of the celebrated Miss Dix, in which she "modestly gives an account of her labours in the cause of the insane in her own country," every line of which is deeply interesting, and redounding largely to her unflinching zeal in promoting the best interests of those labouring under this affliction.

5. The Journal of Psychological Medicine and Mental Pathology, under the able editorship of Dr. Forbes Winslow, continues to take high rank among the kindred publications of the day, and in the Numbers which have appeared during the current year we find the usual amount of instruction and information. In the January issue is a practical paper from the pen of Mr. Waters, of Liverpool, "On the use of Chloroform in the treatment of puerperal insanity," which deserves an attentive perusal, introducing, as it does, to professional notice the application of a remedial agent to an important class of cases with very successful results.

Among so much that is practical and useful we regret to be obliged to notice the occurrence of a paper in the same Number (January), which appears to us hardly germane to the class of subjects embraced in this admirable serial. We allude to that entitled, "Professor Ferrier's new Scottish Philosophy." The writer sets out with a keen dispute as to the legality of his countryman (for we shrewdly guess the nationality of the article) in arrogating to his "new philosophy the title of *Scottish*." Now, while we are free to admit the claims of such writers as Reid and Browne and Dugald Stewart on the gratitude of their countrymen, and all interested in metaphysical studies, on the grounds, too, which the writer sets forth, we think it hardly worth a literary tussle with another honest Scot, to deny his right also to name his discoveries, or whatever they may be, in the same department, by the term *Scottish*. We would more seriously demur to the introduction of such a class of pneumatological disquisition into a Journal like that in which it occurs. If our Scotch friends expect us to master such a terminology as they think necessary to employ, and a specimen of which we subjoin, before we can enter into their views, we must beg leave, for a season at least, to decline the privilege:—

"An object can only exist for *us* in connexion with intelligence. True, yet consciousness declares the object to be a *non-ego, and if consciousness is veracious, a non-ego* it is; then it is a *non-ego-cognised:* yet the *non-ego* is only causally, paternally related to consciousness; that is, it is a *genus* paternally related to its *differentia*-cognised, forming the *species, non-ego-cognised.* Now, to this species, or synthesis, either element is indispensable; take away the *non-ego*, you destroy it; take away *cognised*, you destroy it likewise: you destroy the synthesis in which alone the *non-ego* exists *for us.* Therefore, *for us* there exists no mere material world, no *non-ego minus cognised.*"

Such a specimen of Scotch metaphysics strongly reminds

us of the prize translation at the Cambridge "Little-go," of the students' favourite expression, "Cock your eye," into the classical form, "Gallus tuus ego." It may be very intelligible north of the Tweed, but we honestly confess it is above our grasp of intellect; and we suspect that very many readers of the Psychological Journal will be found to sympathize with us.

The paper contributed by Dr. Theophilus Thompson, of London, on "Mental Labour; its effects on the Blood," is full of suggestive information. We entirely concur with its learned and judicious writer as to the necessity of attention, on the part of professional men especially, to the danger of an over-taxation of mental energy, in the pursuit of any object, however laudable, of any science, however exalted. The concluding remarks of this admirable article are as striking as true:—

"It is a common remark, that the type of disease at different periods varies. In tracing some past eras of disease (speaking in general terms) we may conclude that the plethoric condition, prevalent in the seventeenth century, gave place in the eighteenth to gastric congestion. This condition has now ceased to predominate, and we have perhaps entered on an anæmic era—a state peculiarly unfavourable to the manifestation of power and to the production of great men. For all classes, but especially for the professional, a prudent regard should be had to the probable production and ready aggravation of the anæmic condition, from causes associated with the laws of mind. A different training, physical and intellectual, must be adopted by our clergy, if they are to be kept in the foreground of the domain of thought, and to be suffered to direct those energies of social life which it is our part, as medical men, to cherish. As respects the application of medical theories, a wider range of thought should be pursued. The modifications of many prevalent diseases may have reference as much to mental states as to hygienic conditions of atmosphere and diet. Every remediable infirmity is a violation of the law of progress. If medicine is to render to the community a full amount of good, it must be not simply in treating the maladies of individual patients, but in ministering to the conditions which disturb the vitality of the race, and thus, whilst improving our appliances for daily work, remembering that we are enlisted in the service of mankind, we may make posterity our debtors."

The April Number of the Journal opens with a paper, as startling as we fear true, "On the Degeneracy of the Human Race." This paper may be considered as a digest of a very remarkable work, in the French language, published at Paris during the current year, whose title is thus given:—"Traité

des Dégenéresences physiques, intellectuelles, et morales de l'espece humaine; et des causes qui produisent ces variétés maladives. Par le Docteur B. A. Morel." Some of the facts and statistics adduced in this remarkably able paper are deserving of the deepest attention from all who are interested in the elevation and welfare of our race, physical and intellectual. The deteriorating agents, as well as the noxious habits which tend to the lamentable effects noted, are here detailed at length, by the avoidance of which, and by other sanative means suggested, the evils pointed out are also represented as possible to be met and surmounted. The concluding paragraph, to this effect, is from the work of the French original:—

"The plan which I have adopted is vast; but I am determined to pursue it to the end. The confidence which sustains me does not arise from any exaggerated idea of my own strength, but from a lively and profound faith which strengthens and animates me. I believe that the study of the causes of degeneration, and of their treatment, is one of the most important, useful, and suggestive that can occupy the mind of a physician; and that it is the duty of each, according to his power and ability, to aid in preventing the generalization of the evils pointed out; and thus to have ever before him, as the programme of his labours, the *intellectual, moral, and physical amelioration of man*, or (if the term be preferred) '*his regeneration.*'"

We regret that it is not in our power to speak in entire approval of some of the other papers in this Number of the Journal. Art. III. is entitled, "Capital Punishment for Murder scripturally considered." This paper is contributed by "the Rev. J. F. Denham, M. A., &c.," and is a purely theological one. We must confess our inability to perceive the appropriateness of its introduction into a Journal devoted to "Psychological Medicine," while we are free to acknowledge that, probably with the vast majority of its readers, we remain unconvinced by the arguments of the writer against the established law of this country on the subject of the penalty for murder. The subject is, as we have said, so entirely a theological one, that we forbear to enter on it here. This only we would say, that while the writer's exposition of the great moral precept in the Old Testament (Gen. ix. 5, 6), on which capital punishment for murder is confessedly founded, may, in an almost literal sense, be designated as "contra mundum," we sincerely trust it may be long before he and those who agree with him shall succeed in their efforts to induce our legislators to attempt the dangerous experiment which he would introduce, of substituting some other legal penalty than death for wilful murder.

Fearfully frequent as the crime now is, or has been, under the present state of the law, we can too easily conceive how infinitely worse society might become under Mr. Denham's proposed relaxation. It is a common saying to "Let well alone;" but with reference to the statistics of this crime, in connexion with its existing penalty, we should be disposed to say, "Let ill alone." We notice the introduction of this article chiefly to protest against its admissibility into the Psychological Journal.

While in the vein of criticism we would add, the article on the "Phenomena of Dreams and Apparitions" is hardly equal to its predecessors on the same subject. It is loosely composed, and throws but little light on an interesting subject. The papers on "Marriages of Consanguinity," and on "Hereditary Influence, Animal and Human" (is there not a slight blunder here in the nomenclature?), will repay a careful perusal.

Our space forbids us to dilate upon the contents of the July Number of this interesting Journal, although in many respects more deserving of a lengthened notice than any of its predecessors during the year. It opens with a most valuable paper on "Neglected Brain Disease and Suicide," from the vigorous pen of the editor, in which the case of the late lamented Hugh Miller is largely and justly commented on. We commend the attentive perusal of this article to all who, from their connexion with professions which necessarily draw on mental energy, are deeply interested in the prophylactic view of such subjects; and shall only add, that we should be extremely glad to be able to trace the pen of Dr. Winslow more frequently in the periodical which he so ably edits.

The paper on the "Demon of Socrates" is chiefly taken up with a review of a charge of insanity lately brought against the Grecian philosopher by a French writer, M. L. F. Lélut. It is an interesting contribution, although leaving the main question rather *sub judice*.

The remainder of this Number is devoted principally to a review of the state of lunacy, and statistics of insanity in Scotland and England, with a very interesting account, by Dr. Arlidge, of the asylums of Italy, Germany, and France, from "Notes of a Visit" made to those countries in the year 1855.

The concluding Number of the Psychological Journal for the current year has just issued from the press, and is inferior to none of its predecessors either in interesting matter or in the variety of topics discussed.

The papers on what may be styled the Theory of Psychology are instructive and interesting, although some of them

(and one especially on Philosophical Progress) would, perhaps, to the generality of readers, appear open to the charge which we felt it necessary to prefer against some which have preceded them, as being technical in their language to an extent which some would pronounce to be *bizarre.*

The paper (Art. II.) on the "Insanity of Early Life," contributed by an accomplished French physician, M. Brierre de Boismont, is eminently practical. The cases here adduced of the early manifestation of cerebral disease in France can, we are persuaded, be paralleled by similar occurences in these countries. More than one have come under our own notice, and we would suggest that a careful collection and analysis of such facts, especially where the malady has been proved congenital, might materially aid those endeavours after preventive and prophylactic measures, as regards mental disease, generally considered, which have been broached in some of the preceding papers of this Journal before us.

A review of Dr. Nugent's Report on the State of Lunacy in Ireland, which is highly and deservedly commended, as well as a paper on Lunacy in England and Wales, with ample details and information respecting the same in the asylums of Italy, Germany, and France—being a continuation of Dr. Arlidge's paper—as also an abstract of the new Act regulating the care of the insane in Scotland, and an account of the Sardinian law of lunacy, complete the contents of this Number of the Psychological Journal.

With this Number vol. x. concludes, and while we repeat our approval, generally, of the character and interest of this serial, we must yet in candour state, that we can hardly give it as our judgment that the original contributions in this volume, those especially which deal with psychology in the abstract, have attained as high a literary rank as some which have preceded them in former volumes.

6. The Number for July, 1856, of the American Journal of Insanity has the usual amount of interesting communications, &c., scattered through its pages. In it we observe another step in advance of ourselves, by a decided move being stated to have taken place for establishing an asylum for the reception of drunkards, the New York Legislature having, last session, passed a bill incorporating an Association for the above most desirable undertaking, one which would be most needful and of the greatest importance to establish nearer home. In this Number, also, is a short notice on Insanity in India, taken from a Report on the Lunatic Asylums in the Bengal Presi-

dency, in which it is stated, in accounting for the larger percentage of cases (52·60) in that Presidency as compared with those in Great Britain (37·04), that "a very considerable proportion of those admitted as insane to the gaol hospitals, and probably also to the asylums, were wretches crazed by the excessive use of narcotics, especially of gungah."

An interesting report is given of the Eleventh Annual Meeting of the Association of Medical Officers of American Institutions for the Insane, at Cincinnati, Ohio, the previous May, which was most numerously attended, and at whose sittings several valuable and practical papers were read, followed by discussions which evoked much that was profitable in the treatment of the insane and the management of asylums,—extracts from which we regret much being unable to reproduce here.

The first matter which attracted our attention in opening the Number of this Journal for April last, was an exceedingly well-executed engraving of the Michigan Asylum for the Insane, which, from its representation as there shown, must be a very handsome and imposing structure, in the Italian style. An extended history is given of it, which forms the commencing paper of this Number, and from it we learn that great good sense was shown at the commencement in regard to this institution by the appointment of an experienced Physician-Superintendent in the person of Dr. Gray, who furnished the ground plans, and who had been Acting Superintendent of the New York State Lunatic Asylum, to the post of Superintendent, which we suppose means that he had been the Assistant thereat. This was done with the view of the building being erected "so far under his supervision as to secure his approbation when completed," than which nothing could have been more judicious. And another and equally wise course was carried out, that of "taking as a basis of action the principles embodied in the series of propositions adopted by the "Association of Medical Superintendents of American Institutions for the Insane," which we considered sufficiently important and practical at the time of their publication to transcribe *in extenso* into our Annual Review on Insanity for 1851[a]. We wish the authorities at home would take a lesson from our far-seeing Transatlantic brethren in such matters. Dr. Gray having been subsequently promoted to the chief charge of the New York State Asylum, he was succeeded by Dr. Van Deusen, the Assistant Physician of that institution. The Asylum is adapted for 288 inmates, half of each sex, and is fire-proof, which we have no hesitation in

[a] See vol. xii. No. 24, N. S., p. 397, *et seq.*

saying all such establishments should be. The corridors are, respectively, 155, 160, and 170 feet long, 12 feet wide, and 16 feet in height, in common with nearly all the other rooms, none of which is less than 15 feet. The floors are formed of $1\frac{1}{2}$ inch oak plank, grooved and tongued, and none more than $3\frac{1}{2}$ inches wide. The farm consists of 168 acres, and most of the land is finely timbered with the original growth of oak and other forest trees, thus adding so much to the extern beauties of the Asylum. In the appropriation of the wards we find that the greater portion of accommodation consists in single rooms, there being so many as 240, leaving but 48 to be located in dormitories. This is in the opposite degree to what prevails in these countries, the asylums in which, we consider, are entirely too much limited in single rooms and too abundant in dormitories. But this is done for economy, which is an injurious and mistaken one of its kind, and but ill calculated to promote either the recovery or the comfort of the patients.

Altogether this Asylum will be, from all appearances, most complete in its several arrangements—in fact, be a model one for the New as well as the Old World.

A large portion of this Number is taken up with notices of the Annual Reports of the principal asylums in America exclusively, none of those of the mother country being honoured with a place amongst them. Amongst other papers are, "Observations on Functional and Organic Disease," by Dr. Annan, Physician of the Western Asylum, Kentucky; and, "Hugh Miller: his suicide," which are both readable productions.

7. We know of no more indefatigable, painstaking, and disinterested labourer in all that affects the direct interests of the insane than the author of the very valuable *brochure* entitled, "Notes on Belgian Asylums, including the Insane Colony of Gheel," which is well worthy of being not only read, but carefully studied, pregnant as its several pages are with facts that cannot but prove instructive and suggestive to all immediately engaged in the treatment of insanity. Dr. Webster, its eminent author, we have long known by his professional writings, and thus to know him is to respect him for his philanthropy, and always modest, but not less enlightening, appearance in print, each of his essays presented to the professional public commanding the deepest attention.

In the present instance he gives us a very full account of the hospitals for the insane at Bruges, Ghent ("now designated the modern Manchester of Belgium, having upwards of 100,000

inhabitants, but formerly nearly double that amount"), and Gheel, the "insane colony" at the latter being very minutely described. We wish we could afford space to quote freely from this reprint, it having appeared originally in the Psychological Journal, but we are obliged to restrict ourselves to a short paragraph or two, recommending, however, its perusal in its entirety, which will be found both profitable and highly interesting.

The worthy author, like ourselves, is no supporter of the filthy vice of the day (tobacco-smoking), so common amongst the high-born as well as the most abject—the sane and the insane—as the annexed extract, in reference to one of the asylums at Bruges, shows:—

"Although not of much apparent significance, nevertheless, as it shows the great attention paid, even to minute matters of detail, a very recent improvement, or rather an important addition, which has been made to the male wards of St. Dominick, deserves being specially mentioned. *Spittoons are now placed in such apartments*, particularly those occupied by dirty patients. In this country, where almost every man and boy, nay, even women, seem slaves to that degrading, filthy custom, and health-destroying—both of body and mind—abomination, *tobacco-smoking*, these appendages become absolutely essential throughout any inhabited dwelling, whether for sane people or maniacs. Therefore, irrespective of sanitary considerations,—as most lunatics, by thus placing such saliva recipients within easy reach, may be taught to use them, instead of soiling floors or walls with their offensive spittings,—internal discipline thereby becomes materially promoted. I am no advocate of smoking; on the contrary, would strongly condemn such an unseemly habit—or vice, more correctly speaking—from believing it proves both injurious to the mental faculties, and inimical to the physical powers of many votaries. Nevetheless, if mankind will obstinately use this deleterious weed, assuredly the most excusable proselytes are lunatics. Therefore, spittoons ought always to be placed in every similar institution where smoking is permitted."

With reference to the "insane colony" at Gheel, and which is at at present attracting so much attention and discussion, as to its being applicable in its system to relieve our over-crowded asylums, Dr. Webster observes:—

"When I inspected Gheel, the total insane population under treatment comprised 774 persons, as previously stated. Of these, 409 were male, and 365 female lunatics; the town, or first section, being then most numerous. One-half of the whole number were classified as capable of, and indeed actually employed in, bodily labour, a large majority of whom comprised females, while the remainder

were reported as idle or unable to work, the greatest number of that category belonging to the male sex. Amongst the total inmates, the largest proportion, or 350 cases, were examples of mania and its varieties. Dementia came next, of which were found 265 instances. Melancholia showed 60 cases. Epilepsy supplied 51 instances, the males being 25, with 26 females; whilst the remainder exhibited less marked varieties of mental disease. The 774 patients now enumerated were distributed in nearly *five hundred* different dwellings; whereof about 300 were cottages or farm-houses in the country, the rest being residences in the town of Gheel."

And further on this paragraph occurs, with which we must take our leave of those graphic "Notes:"—

"Speaking generally, the sexes are usually lodged in separate houses. However, in regard to very aged persons, whose disease was chronic, and were of quiet, inoffensive dispositions, a man occasionally lived in the same family where an insane old woman also resided. All suicidal, dangerous, homicidal, or mischievous insane patients, are rarely, if ever, received as inmates at Gheel; while, on the other hand, should any resident subsequently come under these categories, they are forthwith sent home, or to an asylum elsewhere. Again, the authorities generally place boisterous, idle, or agitated maniacs, in remotely situated and solitary cottages or farm-houses, which occupy the open heaths; where such lunatics, having no neighbours, cannot disturb any person, or cause much annoyance. These, although excited or very noisy, may there walk about without danger to others or themselves; being thus placed beyond the observation of bystanders, not near similarly afflicted fellow-creatures."

8. The Twenty-seventh Annual Report of the Belfast District Hospital for the Insane brings the state of that institution up to the 31st of March last, and from it we find that during the year then completed, there had been an aggregate number of patients under treatment of 449, 247 of whom were males, and 202 females. Of these, 142 were new admissions during the year. Those discharged recovered were 66; 15 were relieved, 38 died, and 330 (108 males, and 142 females) remained under treatment; 221 of whom were deemed incurable, and 109 "probably curable." The time of treatment of those discharged recovered (66) was as follows:—

	Males.	Females.	Total.
Under 3 months, ...	6	8	14
From 3 to 6 months, ...	9	16	25
„ 6 to 12 „	8	8	16
„ 1 to 2 years, ...	4	2	6
„ 2 to 5 „	0	3	3
„ 5 to 10 „	0	2	2
Total, . . .	27	39	66

From the above it will be seen that the large proportion of recoveries occurred between three and six months; and further, that we are not to despair of hope in the cure of insanity, though years may have elapsed from the time of its first appearance,—two cases, we see having been under treatment from five to ten years, when recovery in both was happily the result. On the subject of the cases which proved fatal during the year the Report states:—

"The deaths which occurred in the year now concluded were double those of 1855–56, having been 38 in all—those of last year being but 19. This excess may, in part, be accounted for by a large number having come under treatment—by several having been received in so completely broken-down a state of health that no other result could have been looked for but a fatal one, 5 dying in less than a month after admission—by the fact of, each year, a larger number of the older cases succumbing—and, lastly, that the deaths in 1856 were much below the usual average; for it may be observed that a mortality of from 10 to 12 per cent. is the ordinary percentage in establishments set apart for the treatment of insanity: a disease, too, which is admitted to be inimical to longevity—few of its subjects living to a ripe old age. 7 of the deaths arose from bowel affections, as already referred to; 7, also, from paralysis; 9 from general debility and exhaustion, from continued mania; 4 from phthisis; 3 each from epilepsy and struma; 2 from dropsical affections; and 1 each from congestion of the brain, rheumatic disease, and apoplexy. 6 of the deceased were between sixty and seventy; 6 between fifty and sixty; 7, forty to fifty; 10, thirty to forty; 7, twenty to thirty; and 2 under twenty. The oldest (a female) was sixty-seven, and had been an inmate twenty-two years nearly: the youngest (a male), seventeen, and under treatment but three months."

The additional buildings, which had been so tedious in their completion, appear now to be at last finished, and not only so, but fully occupied, the house being already in rather a state of surcharge, owing to the accumulation of chronic patients, as prevails in all similar establishments nearly, thus preventing, as must necessarily happen, the speedy admission of recent cases, a matter of so much importance. We are glad to find from the subjoined paragraph that "light reading" is so well provided for in this institution, and which should be generally encouraged in our public asylums:—

"In addition to other light reading already provided for the patients, the following periodicals are now also supplied to them, viz.: —'Titan,' 'Household Words,' 'National Magazine,' 'Illustrated News,' 'London Journal,' 'Illustrated Times,' 'Punch,' 'Morning

News,' &c. The above afford a pleasing and entertaining variety of the current events, &c., of the day, and give them much pleasure and amusement. But there is no reading which more arrests their attention, or is more popular amongst them, than newspapers; the diversified contents of which those who are readers amongst them will peruse with the greatest interest, all other publications holding but the second place in their estimation compared with the public press."

In connexion with the existing Royal Commission of Inquiry into the state of the Insane in Ireland, the Report states:—

"On the 10th of November last, all the Commissioners appointed by the Queen's Royal Warrant of the 8th of October, 1856, viz., Sir Thomas N. Redington, K.C.B., Chairman; Mr. Wilkes, M.R.C.S. (Commissioner in Lunacy, England), Mr. Lutwidge, Barrister-at-Law (Commissioner in Lunacy, England), Dr. Corrigan, M. D., and Dr. Andrews, Q. C., visited the house, spending from $9\frac{1}{2}$ A. M. until $3\frac{1}{2}$ P. M. in its inspection. No notice whatever having been previously received of their intended official visit, the Board, of course, had no opportunity of meeting them. Both before and since their inspection, several most voluminous and intricate Returns have been called for by, and transmitted to, the Commissioners, which required a vast amount of time and labour in their preparation—especially so from their periods not corresponding with those officially required to be in use in the Asylum—namely, from the 1st of April to the 31st March—but from the 1st of January to the 31st December; thus necessitating entirely new calculations, &c., to be gone through, the great labour of which it is almost impossible to conceive."

A lengthened correspondence which occurred between the Commissioners and the Board, in regard to the objects of their inquiry, is given in an Appendix, respecting which we cannot do more than call attention to. On looking over the names of the Commissioners, we are glad that there was at least one of their number practically acquainted with the duties set forth to be performed, however humiliating to us that he had to be taken, with another, from his own proper official duties elsewhere, to conduct a confessedly unnecessary inquiry, the one grand object of which was, as publicly stated, that under its covert another and an expiring effort might be made for the compulsory appointment of paid chaplains to all the asylums in Ireland. A ponderous Blue Book will, of course, in due time be heralded forth with loud pæans as the grand finale of this roving Commission, which, however, none but a very few interested parties will take the trouble to look at, and the cost of which will never be compensated for by any corresponding good resulting

from its concoction, our institutions for the insane in Ireland being equally as perfect in essentials as the most vaunted asylums elsewhere, and having the seeds within them of progressive improvement, without the aid of costly special commissions, or any meddlesome legislation as a necessary consequence thereof.

We have left ourselves only room to add, that the expense of this institution for the period embraced in the Report was £6314 2*s.* 7*d.*, with a daily average number of patients of 323, at an average annual cost of £19 10*s.* 7*d.* Neither tobacco nor snuff formed an item of expenditure during the year.

9. Dr. M'Munn's "Second Annual Report" of the Institution over which he so ably presides, the Sligo District Hospital for the Insane, is, like its precursor, well drawn up and judiciously arranged. In one respect it is, we consider, somewhat in advance of what the experience of Dr. M'Munn, with all his close observation of passing events, warranted him in pronouncing so emphatically upon as he has done in this Report, and which, we are bound to say, has very much the semblance of a foregone conclusion on his part. We now refer to his *ex cathedrâ* opinion upon the religious ministrations of chaplains within the walls of his institution, in connexion with which he states:—

"I believe the strict (?) observance of religious ordinances invaluable in hospitals for the treatment of the insane, and that much good may be done by the frequent, well-timed, and judicious communication of the chaplains. The chaplains of this institution report most favourably of their ministry during the past year."

No doubt they do. Just hear the Rev. E. Day, the Protestant chaplain, with what modesty he reports upon his "well-timed and judicious communications" to 22 of the total of his flock, of *every kind:*—

"I have no hesitation whatever in asserting that I firmly believe that religion should form a most essential element in the treatment of insane people."

Dr. M'Munn, the more competent party of the two, only goes so far as to say that "he believes;" but the Rev. E. Day has "no hesitation whatever in asserting"—

"That those persons who are weak in intellect, and show an idiotic tendency, can appreciate the plain and simple truths of the *Gospel*, of which *God* himself has said in *His* Word, 'that a wayfaring man, though a *fool*, shall not err therein.'"

If this be not perverting Scripture to a particular purpose, if not worse, we know not what is. But leaving this out of the question, this reverend chaplain is too flippant in his style, and too little practised in his vocation, to deliver himself thus presumptuously, and entirely contrary to the opinions both of divines and physicians, who, for every month of experience he has had, have had years, and yet would not feel qualified to speak or write after this manner. We are only sorry that the Report before us should have been permitted to have been so interlarded.

Dr. M'Munn thanks the Board of Governors, "for the paramount authority they have vested in his hands," and yet we find it afterwards stated more than once, that in the appointment and dismissal of the domestics the approval of the Board had to be sought and obtained. Strange "paramount authority" this. When the Governors deem it necessary thus to checkmate the Resident Physician, we would recommend that officer to leave the entire responsibility in regard to the appointing and discharging of the servants in their hands, and have nothing further to do with this mere *umbra* of "paramount authority."

The expenditure incurred in the maintenance of the Sligo Asylum, for the past year, amounted to £3025 16*s.* 8*d.*, being an average of £23 18*s.* 4*d.*, for each patient. The sum of £5 0*s.* 4*d.* was expended in tobacco, which, however, we are glad to know, Dr. M'Munn does not approve of, and that he has been gradually limiting its use amongst the patients.

Three *pay patients* have been admitted into the Asylum, on which subject Dr. M'Munn thus observes:—

"I am of opinion that if respectable persons, in limited circumstances, continue to be admitted, separate apartments and other necessaries suited to their position should be provided for them. I have no doubt they feel the deprivation of any of the ordinary comforts to which they have been accustomed, and that the association with the pauper patients is both annoying and injurious to these:"

—in which latter expression of opinion we entirely agree with Dr. M'Munn; but feel bound to dissent most decidedly from him in mixing up pay and ordinary patients under any circumstances in our district asylums.

On the subject of treatment Dr. M'Munn says:—

"The treatment pursued has been, in acute cases (when the subjects were young, robust, and evidencing cerebral congestion), local depletion, purgatives, the prolonged use of tepid baths, and cold irrigation over the head. In chronic cases medicines have not

been extensively employed; chloroform has been occasionally used with advantage. Narcotics have been occasionally given, but I cannot say with much benefit. I have found shower-baths useful adjuvants. Mechanical restraint has not been ordered for the last seven months, and seclusion rarely."

And as regards the disposal of chronic cases, and the proper size of asylums, he thus sensibly remarks:—

"If, in consequence of the large and progressive decrease in the numbers now happily going forward in the workhouses, the amalgamation of unions, which has been for some time mooted, takes place, some of those institutions might be made available as incurable hospitals for the insane, including epileptics and idiots, thereby doing away with the necessity of any further expenditure for increased accommodation in the existing asylums, leaving these for their legitimate object, namely, that of hospitals for the treatment of dangerous, refractory, and curable cases, in each of which it is desirable that the maximum number of patients should not exceed 300, in order to insure the proper care which such cases require."

There are several other extracts which might be given with profit to our readers from this generally well-digested and lucid Report; amongst others, that relating to the excellent plan—a novelty in Ireland—of allowing the patients to take walks outside the Asylum; but we have only space for the annexed tabular statement of the year's admissions, &c., with which we must close our notice of it:—

	Males.	Females	Total.	Males.	Females	Total.
In Asylum 1st April, 1856, . .	59	54	113			
Admitted from 1st April, 1856, to 31st March, 1857, . .	28	24	52			
Do. readmitted, ...	4	3	7			
				91	81	172
Discharged recovered, ...	12	11	23			
Discharged improved, ...	2	3	5			
Died, ...	8	3	11			
				22	17	39
Remaining in Asylum 31st March, 1857, ...				69	64	133

	1856.	1857.
Per-centage of recoveries on the daily average number resident, ...	17·14	18·18
Per-centage of deaths on ditto, ...	10·47	8·7
Per-centage of recoveries on the admissions, . .	25·37	28·81
Per-centage of deaths on ditto, ...	4·48	11·86
Daily average number resident, ...	105	126·5

10. Dr. Thurnam, in his Annual Report of the County of Wilts Asylum, at Devizes, states that "the circumstances of the past twelve months did not call for an extended Report from him; which, on the present occasion, might be nearly confined to a single record of the events of the year."

His Report is accordingly more than usually concise on the present occasion, but still interesting in its facts: amongst which the more prominent are, that during the year the number of patients under treatment was 301, of whom 141 were males, and 160 females. The admissions for the same period were 100,—39 males, and 61 females; 20 of whom were re-admissions (6 males and 14 females). The recoveries amounted to 52, and the deaths to 28. The causes of death ascertained by post-mortem examination were, 6 of inflammation of the lungs and pleura; 4 of general paralysis (a cause greater than in any former year); 3 each of pulmonary consumption, epilepsy, and exhaustion; 2 of softening of the brain; and 1 each of arachnitis, acute mania, apoplexy, paralysis, chronic pleurisy, disease of the heart and lungs, and chronic disease of the liver.

Two of the females were admitted in a state of pregnancy, and were both in due time safely delivered in the asylum, one being a still-born birth. There were three escapes of patients, two of whom were soon after brought back, and one was permitted to remain at home with his friends. The Wilts Asylum, like so many others, is in immediate necessity of an enlargement, but we really think that the time has now fully arrived for the resident physician-superintendents to object in every legitimate way in their power to the making of additions to already sufficiently large asylums; certainly, not to encourage this *growing* evil. Dr. Thurnam anticipates much inconvenience from the crowding of patients and an interruption of due classification, on a contemplated addition to the female wing being undertaken, and from experience ourselves on this head, we can tell him that he little dreams of the disorganization and innumerable discomforts which will most assuredly follow in the wake of tradesmen coming within the walls of his institution; and we accordingly feel it only a bounden duty earnestly to forewarn on this head, in the hope of all parties concerned being enabled to be forearmed.

Dr. Thurnam writes forcibly on the necessity of a fund being established for the immediate relief of discharged patients, which we have no hesitation in saying would be a most desirable adjunct to all such establishments, and be the means of preventing not a few cases of relapse from the circumstance, which too often occurs with discharged patients, of having nothing but poverty and discomfort to contend against, at the

time of all others when they require the most judicious and careful attention on the part of kind friends, instead of the trying condition to even the soundest in mind and body arising from the *res angustæ domi*. At Hanwell Asylum it appears there is an available fund of £300 per annum for this most laudable purpose, arising from a sum of £14,000 invested in stock, and to which the late Queen Adelaide was a liberal contributor. At Colney Hatch Asylum a fund of the same kind also exists, to which her present Majesty, with her usual considerateness, has given freely.

11. The Seventeenth Annual Report of the Crichton Institution is the last which will appear having for its author Dr. Browne, who, since the opening of this establishment, has been its Resident Physician-Superintendent, and obtained for it, through his eloquent reports and able management, a name and a place, the very chiefest in excellence, amongst kindred institutions. We have frequently before had the great pleasure of noticing in those Annual Reviews the Reports of Dr. Browne, with copies of which he always supplied us; and here, shortly to digress, we may observe, that our rule, in general, is to embrace alone in our notices those Reports, &c., which are sent to us direct, so that if any be not in our list, the fault of the omission is not on our side. This we stated on a former occasion, and repeat it now again, for the guidance and information of Superintendent-Physicians, and others engaged in the specialty of insanity.

To return, however, to Dr. Browne's Report, a glance at the one now under consideration shows that it is fully equal to those which have preceded it for enlightened views, true philanthropy, and valuable information in all relating to the treatment of the insane generally, and those more particularly under his own immediate charge, of whom we find he had, during the year ending in November, 1856, the large number of 395, which are thus accounted for:—

In the Institution, 11th November, 1855, . .	313[a]	
Admitted since, ...	82	
		395
Discharged as recovered, ...	50	
Discharged as improved, ...	13	
Died, ...	25	
		88
Remaining under treatment 11th November, 1856,		307

[a] The numbers in this Summary Table are not classified as to sex, which we consider an oversight.—Rev.

The discharges in recoveries, we are informed, were "more than 50 per cent. on the admissions," as they would, no doubt, if confined to them exclusively; but we take for granted some of them occurred amongst the inmates of longer standing; but of this we are not given any data to judge, the period of time of treatment not having been given, which, perhaps, would have been desirable as being more statistically complete. Of the 82 new admissions, 24 were of the affluent class, and 58 were ordinary inmates, the former being selected from 101 applicants, and the latter from 119 of those who were indigent. Dr. Browne states, in regard to the deaths which occurred, that 8 were boarders, and 17 paupers; that 5 of the casualties occurred within a few weeks after their admission, 5 suddenly, and the remainder of exhausting ailments characteristic of affections of the nervous system, viz., epilepsy (3), paralysis (3), and apoplexy (2).

Referring to the recoveries and improvements which frequently take place almost immediately following a patient's admission into an asylum, Dr. Browne very truly observes:—

"Recovery and improvement often occur suddenly, contemporaneously with crossing the threshold of the asylum, as if the influence of discipline, the helplessness, the effeteness of a single will, the absorption of personality in the general movement of a large establishment, and the order and restraint which obtain, acted as great revolutions in the economy in rousing, recalling consciousness and control."

Dr. Browne observes upon the great difficulties there are in ascertaining the real physical condition of those admitted under treatment; and that those even who had, during a lifetime, been associated with the insane are led into error. He most graphically describes the several phases of alienation which came under treatment during the year, and which, if we could reproduce here, would afford much to interest the reader; but we are compelled to pass them by, together with other important matter, for which we must only refer to the Report itself, the whole contents of which are valuable and practical.

Dr. Browne, as we already observed, has now closed, with this Report, his official connexion with Crichton Asylum, having been recently appointed to office in the new Commission in Lunacy for Scotland, than which a better selection could not have been made—one, however, which the Government of the country was *compelled* to make. The new Commissioner takes with him into his higher and well-deserved office the best wishes of every member of the particular branch

of the profession to which he belonged, and the trying and onerous duties of which he ever discharged with such honour, zeal, humanity, and consummate ability, as to elevate it as a specialty, and to leave behind him as a Resident Physician a name and character which will always redound to his fame.

12. The Aberdeen Asylum, under the able and judicious management of Dr. Jamieson, continues to hold a justly high place amongst the Scotch public asylums. Its last Report, drawn up, as usual, by Dr. Jamieson, is short and practical. Special reference is made to the Report of the Scottish Lunacy Commission as far as regards this establishment, in which Dr. Jamieson states, that though not a little credit is given by the Commissioners to the Asylum, they make remarks upon it "inaccurate in part, seemingly, and liable to be thought ungenerous and unfair in spirit." Dr. Jamieson, on behalf of the Aberdeen Asylum, goes on to say, that its "alleged defects are mostly dubious, or in the rank of such misapprehensions or exaggerations as might be expected only from a Commission which had not one single representative of the management or of the officials before their court of examination," which appears on the face of it as somewhat extraordinary and requiring explanation. Dr. Jamieson informs us that the Aberdeen Asylum was one of the earliest to adopt the non-restraint system, which has been fully carried out "without the substitution of prolonged seclusion, or other modes of harsh treatment." Again, he significantly mentions, that "it has not followed in the wake of others, but kept going with the times;" and that "its patients never have been kept immured for lengthened times within doors at work, nor has any attempt been made to task themselves rather for the advantage of the institution than for their own profit;" and that, "although it cannot, in competition with some hospitals, be represented that its patients club together for the production of a volume of essays, or engage in the editing of newspapers, and in the acting of dramatic performances, they are encouraged to occasional association together in concerts; are furnished with various means of indoor diversion, such as billiards, bagatelle, cards, chess, draughts, and musical instruments; besides having such out-door amusements as walks, cricket, quoits, bowls, and from time to time visits and excursions." If amusements, such as the above, be not considered sufficiently varied and liberal for the inmates of an hospital for the insane, we are at a loss to know what would. There are evidently some hard hits in these observations of Dr. Jamieson against some of the other so-called "char-

tered" Scotch Asylums, in most of which there would appear to be a race of competition as to which should carry off the palm for the greatest and most constant variety in the way of fashionable entertainments and exciting amusements for their inmates, which we consider somewhat bordering on the extreme, and, under the circumstances, rather out of place.

Not further to enlarge on this portion of Dr. Jamieson's Report, which indeed is its chief item on the present occasion, we next give the following statement of the year's admissions, &c.:—

	Males.	Females.	Total.
Under treatment, 1st April, 1856, . . .	138	141	279
Admitted since, ...	46	57	103
Under care and treatment during the year, .	184	198	382

The above are thus accounted for:—

	Males.	Females.	Total.			
Discharged recovered, .	20	24	44			
„ improved, .	3	5	8			
„ unimproved,	7	10	17			
Died, ...	10	10	20	40	49	89
Remaining under treatment 31st March, 1857,				144	149	293

The causes of death were, 3 each of paralysis and exhaustion; 2 each of epilepsy, disease of brain, and phthisis; 1 each of erysipelas, disease of urinary organs, gastritis, laryngitis, diarrhœa, disease of knee-joint, apoplexy, and bronchitis.

The year's expenditure amounted to £5754 18*s.* 8*d.*, in which we are happy to see no charge brought forward for tobacco in any form.

We must not omit to mention that, appended to this Report are an excellently executed lithographed representation of the ground plan, and an isometrical drawing of the present state of the Asylum and its grounds, prepared by Mr. Ramage, architect.

Each of our public hospitals for the insane should follow this example; the expense could not be very much, and the advantage would be very great of having a ground plan and elevation of each in their Annual Reports.

13. Several pages of the Report of the Perth Asylum for the present year are taken up with a lengthened disquisition on the propriety of tobacco-smoking and the taking of snuff being permitted among the patients of an hospital for the

insane. We consider the space thus occupied might have been turned to a more profitable account, and our only regret is, that a scientific member of the profession, as Dr. Lindsay undoubtedly is, should, in however modified a way, be an advocate for the "vile weed" in question, in any shape.

It is very strange that the Perth Asylum Directors should continue to withhold from the public any statement whatever of the expenditure incurred in the maintenance of their institution. We felt it our duty to remark upon this important omission in a former Annual Review[a], and we now again call attention to it in the hope that this most needful information will not be continued to be withheld. Very large funds, we believe, are at the disposal of the Directors, and on every account we maintain they are bound to let the distribution thereof be no longer kept secret. Their institution is the only one we know of that acts in the manner we have indicated, as regards its income and expenditure. This should not be.

The general results of the year were as follow:—

	Males.	Females.	Total.
Remaining under treatment for the year ending June, 1856,	78	68	146
Since admitted,	23	24	47
Total treated during the year 1856-57,	101	92	193

	Males.	Females.	Total.		
Discharged recovered,	7	15	22		
,, improved and unimproved,	3	6	9		
Died,	6	1	7		
	—	—	—16	22	38
Remaining in Asylum, June, 1857,			85	70	155

The causes of the deaths were, 2 each of maniacal exhaustion and general paralysis; 1 each of apoplexy and intercurrent pneumonia of phthisis; and 1 from suicide by strangulation. There is in this Report, as formerly, a considerable amount of minute particulars of an interesting kind, of the treatment pursued—medical, moral, industrial, instructional, and recreational—together with copious statistical and some microscopical information; the Report clearly showing that its able compiler, Dr. Lindsay, is well qualified for the performance of his duties, and intensely alive to the best interests of his patients.

[a] See vol. xviii. No. 36, N. S., p. 393.

14. The last book in our extended list for noticing in our present Review is Dr. Kirkbride's Report of the Pennsylvania Hospital for the Insane, for the year 1856. The author holds a very eminent place amongst the American Superintendents, who are a most indefatigable and painstaking body of men in their specialty, and who deserve the greatest credit for the rapid strides they are making in rendering their institutions models of excellence and advance in the philosophical treatment of their patients. And second to none, either on this or the other side of the Atlantic, is Dr. Kirkbride, whose name is well known, and equally respected, for his great ability and philanthropy on behalf of the insane classes. His Report, now before us, is full, interesting, and suggestive in its several departments, and had we space at our disposal we could transcribe into our pages many passages well worthy of the attention of our readers. We annex a few, only regretting our inability to give more. The first bears upon a subject respecting which his explanation appears quite satisfactory:—

"It is a common cause of surprise that so large a number connected with agricultural pursuits are received into our hospitals for the insane; and the question is constantly asked, why so many engaged in an occupation, which has ordinarily been regarded as among the most healthful, should be affected with mental disease? Assuming the number of cases received as a fair indication of the amount of insanity occurring in the different classes of the community, all kinds of theories have been given in explanation of so unexpected a result. While some have attributed this supposed condition of things to what they regarded as the strong diet which farmers used, even specifying pork as the objectionable article, others have been equally decided that it was owing entirely to their want of amusements, or their hard work and frequent exposure. The fact is, however, that no pursuit is more healthful, or more likely to secure mental tranquillity, as well as physical well-being, than the stirring life, the regular and active exercise in the open air, and the variety of occupation, which belong to the agriculturist. Although, perhaps, less susceptible to some of the moral causes of insanity than many other classes,—for sound health, regular habits, and labour in the open air, are among the greatest safeguards against many of them,—still they cannot be expected to escape entirely the influence of those to which all are exposed. They, too, must have griefs for which there is no solace, sorrows that leave their impress in every heart of ordinary sensibility, sources of mental anxiety that none can hope wholly to escape, reverses of fortune, and disappointed hopes, that often, especially if joined to impaired health, quietly but surely undermine the fabric of human reason."

The following extract on "Hereditary Tendency" we consider much to the purpose:—

"Hereditary tendency has not been recorded as a cause of insanity, because, where it is so, it is a predisposing, and not an exciting one. Strong as the predisposition may be, something more, although apparently trifling, is requisite to develop the disease. Although in many cases this hereditary predisposition is strong, still, the very large number in which not the slightest shade of it could be detected, is sufficient to show that none can feel entire security that they may not suffer from the disease, because in a long line of ancestors no trace of it could be discovered. Cases are frequently referred to, by careless observers, as hereditary, which really are not so; the example of two sisters, none of the ancestors of whom had been insane, or where an uncle or nephew had been insane, without any other relatives having suffered from the disease, are clearly not hereditary, however much, from their social relations, they may have been exposed to the same exciting causes. Sound sleep, at regular hours, is highly important for every person predisposed to this form of disease, but the want of it is believed, of itself, to be very rarely a cause of insanity. It is more commonly merely the result of other causes, and, in many instances, only a symptom of the first stage of the disease. These views will account for 'loss of sleep' not being found among the causes enumerated in the Table."

On the value of occupation of some kind or another, as a prophylactic against mental disturbance, Dr. Kirkbride thus sensibly writes:—

"There is also another interesting fact made out pretty clearly, and that is, that any respectable occupation is better for mental health than having none at all; the number of admissions of males here with 'no occupation' being as high as 212, and, without doubt, showing a higher proportion relatively than any of the callings referred to in the Table. This might naturally be expected, for very many persons, without some regular occupation, either of private business or public trusts, seem unable to pursue that course of life best calculated to maintain physical health or permanent mental integrity, but gradually fall into habits that, sooner or later, prove destructive to both."

Like so many of our own asylums, the Pennsylvanian one was crowded during the past year, and so many as 50 had to be refused admission from want of room. The total number in the hospital during the year was 396, the highest number at any one time being 244, and the lowest 224. The numbers as to sex, during the year, were—males, 194, females, 202; the highest of males, at any one time, being 128, and of females, 125. The male admissions for the year were 74, and the

females, 92. The number of recovered cases during the year was 89; improved, 48; not improved, 13; and of deaths 22 (8 males, 14 females); the causes of death were:—7 of acute mania, 3 each of softening of the brain, phthisis, chronic diarrhœa, and gradual exhaustion induced by high mental excitement, want of sleep, and a steady refusal of food; 1 each of congestion of the brain and dysentery; and 1 was a case of suicide, but by what means is not stated, which we consider an omission, it being always desirable to give the fullest particulars of such unfortunate but unavoidable casualties, the prevention of which in asylums, however carefully and diligently superintended, cannot be altogether guarded against. The great surprise is that so few comparatively occur in them. We would beg to recommend to Dr. Kirkbride that the year's results, as regards sex, admissions, numbers at beginning and end of the year, deaths, &c., &c., should all be condensed in one general Table, which would be a great convenience to the reader.

Manuale Completo di Ostetricia per gli Studenti Medicina e Chirurgia e per le Levatrici. Del Dr. Vincenzo Balocchi, &c. Con 146 figure intercalate nel Testo. Firenze: 1856. Fcap. 8vo, pp. 894.

A Complete Manual of Obstetricy, for Students in Medicine and Surgery, and for Midwives. By Dr. Vincenzo Balocchi. Florence: 1856.

Obstetric science stands but little indebted to Italian literature. We are not aware of any Italian accoucheur whose name is "known to fame" as a discoverer, improver, or author. We were, therefore, all the more pleased to meet with this compendious and well-executed Manual of Midwifery. From the preface we learn it is a second edition, the first having appeared in 1847. It is the text-book of the students in the Maternity Hospital at Florence, in which Dr. Balocchi is Professor of Midwifery and Operator. The illustrations are numerous: some of them are original, and all are fair specimens of wood-engraving.

The work is divided into five books. The *first* is devoted to the consideration of the normal anatomy, and the pathology of those organs in the female which are subservient to generation, pregnancy, and parturition. The deformities and malformations of the pelvis are treated of at some length in the latter part of this first book, and a description given of the different modes of measuring the pelvis. Of pelvimeters, the

author gives a preference to that of Professor Van Hueval, of Brussels; of which, however, all we can say is, that it appears to be the least imperfect instrument of the kind that has yet been invented. "Besides these modes of measuring the pelvis," writes Professor Murphy, "there are what have been called 'digital measurements;' or, in other words, the experienced accoucheur, from constant habit, when he passes the finger or hand into the vagina, will form a very accurate estimate of the space in the pelvis." With these remarks we entirely concur.

The *second book* relates to the function of reproduction, and to the fruit of conception. The signs and symptoms of pregnancy, and the diseases of this state, are here described. A very interesting article is introduced upon the diseases which may occur during pregnancy, and the influence that this may exercise upon them, and *vice versâ*. This opens a large and important field for investigation, and one that has been but little explored. Dr. Balocchi's remarks are good so far as they go, but then they are very brief and general. In France, Grisolle has done a good deal to advance our knowledge in this direction, and has given a full history, based on copious statistics, of the mutual influence of pneumonia and pregnancy, and of phthisis and pregnancy. In the Number of this Journal for November, 1854, is the abstract of a Paper on this same subject by Dr. M'Clintock; and in the November Number of the following year will be found a short communication from Professor Montgomery. These are almost the only contributions we know of specially treating upon the reciprocal influence of pregnancy and disease, if we except the essay by Dr. Warren, reviewed in our present Number[a]. The "hydatigenous mole," about the pathology of which so much confusion has prevailed, the author regards as a disease of the chorion, the cysts most frequently showing themselves in the rudimentary placenta, but not confined exclusively to this part of the membrane. The other diseases of the ovum and the diseases of the fœtus in utero are all treated of, but, of necessity, in a very dry and condensed manner. Indeed, in a Manual such as this, intended only for pupils and midwives, we could not reasonably expect to find lengthened articles on all these subjects.

The *third book* relates to parturition. It is divided into two sections, the first of which includes all cases of labour that are terminated by the natural efforts, without injury to mother or child; and the second section embraces all the forms of dystocia, and the more serious complications which may arise

[a] See page 431.

in the course of labour, imperilling the safety of mother or child. In regard to the mechanism of parturition (which falls under consideration in this third book), the author, we are glad to find, follows the doctrines of Naegèle, in preference to the more artificial and complex classification of Baudelocque.

The *fourth book* is entirely taken up with descriptions of all the obstetric operations, and the modes of performing them. Ample instructions are laid down for the guidance of the operator, and, on the whole, these rules are clear and judicious. The plates illustrating the manner of using the forceps after it is applied to the head present a novel feature. By a combination of curved and spiral lines, we have exhibited to us in an intelligible way the directions in which the traction of the instrument is to be exerted. By this addition the value of the drawings to the student is considerably increased.

The *fifth book* treats upon the management of the third stage of labour, and of the new-born infant; and also of some of the diseases which may complicate the puerperal state.

Such is a condensed analysis of the contents of Dr. Balocchi's Manual. We regret that unavoidable circumstances prevent our giving it a more extended notice, and entering at length into some of its details. That a work of such scientific pretensions should be intended for midwives will, no doubt, appear strange to many of our home readers. It argues, in truth, a bad state of things, and shows that in Italy, as well as in Germany, France, Norway, &c., midwives continue to monopolize the great bulk of obstetric practice. Whether these countries will ever become reformed in this matter, and emancipate themselves from the dominion of Gamps and Harrises, is a question in political economy too profound for us to be able to solve.

This is altogether a well "got-up," judiciously compiled book, and is well adapted to the purpose for which it is intended. It possesses one feature, at all events, that will commend it to pupils,—it is unincumbered with references to authorities, or with statistics. It is not free from some faults, but only such as are common to the whole species of books called "Manuals." We have already alluded to the illustrations: they are numerous, effective, and well executed, and although we recognise among them some old friends, still a very large proportion seems to possess the very rare merit of being original designs.

Lærebog i Födselsvidenskaben for Jordemadre. Ved DR. F. C. FAYE, Professor i Födselvidenskab; Fruentimmer og Börnesygdomme ved Universitetet, Overlæge ved Födselsstiftelsen og Bestyrer af Jordemoderskolen i Christiania. Andet Oplag. (Omarbeidet og foröget.) Med 39 i Texten indtrykte Tegninger. Christiania: Feilberg og Landmark, 1857.

A Manual of Obstetric Science for Midwives. By DR. F. C. FAYE, Professor of Midwifery and the Diseases of Women and Children in the University; Principal Physician to the Lying-in Institution; and Director of the School of Midwifery in Christiania. Second Edition. Revised and enlarged; with thirty-nine woodcuts inserted in the text. 8vo, pp. 220.

THIS is an exceedingly neat, comprehensive, and highly practical manual, intended for the instruction and use of midwives in a country where medical aid is less generally accessible throughout the kingdom than is the case with us. It is consequently calculated to be useful not only to the class for whom it is more immediately designed, but also to the medical student, and as refreshing to the memory even to the obstetric practitioner himself. It is divided into eight chapters, treating respectively of the structure of the human body in general, and of the female organs in particular; of pregnancy; of the several modes of examination, a subdivision of the chapter being given to the special examination of the pelvis; of regular labour and its treatment; of the regular course of the subsequent confinement, and of the care of the mother and child; of irregularities in the nature and in the course of pregnancy and labour, and of their treatment; of the most important and most usual morbid affections of the lying-in woman and of the new-born child; and lastly, of some special rules for midwives in the exercise of their profession. A work so essentially elementary is scarcely suited for closer examination in our Journal; we shall therefore content ourselves with observing, that in clearness of arrangement and description it bears evidence of the experience and ability of its distinguished author; and that the anatomy of the parts concerned in gestation and delivery, the condition of the fœtus at various periods of intra-uterine life, its normal position in the womb, the structure of its cranium, and the mode of its passage through the outlet; the nature of several abnormities in the

shape of the pelvis, in the presentation of the child, and in other circumstances attending pregnancy and delivery, are made particularly plain by means of the numerous woodcuts with which the volume is illustrated.

Die Kindheit des Menschen. Ein Beitrag zur Anthropologie und Psychologie. Von Dr. Oskar Heyfelder, Privatdocenten an der Universität zu München. Erlangen: Verlag von Ferdinand Enke. 1857. 8vo, pp. 92.

The Childhood of Man. A Contribution to Anthropology and Psychology. By Dr. Oscar Heyfelder, Private Lecturer in the University of Munich.

In the above-named very useful work the author treats consecutively of the physiological and psychological history of childhood; of hereditary influences, and of the effects of impressions during fœtal life, and during the period of suckling; of nursing, and education; of punishment, and its several modes; of the effects of too early exertion; and of the period of puberty.

In the second division of his subject he details, in a note, some interesting particulars of the process of "learning to see," in the case of an intelligent young girl who had become perfectly blind in her seventh year, and continued so for ten years, at the end of which time, under the influence of galvanism, she recovered the power of vision, having completely lost all ideas derived from the sense of sight. This case may be taken as a practical commentary on the *à priori* answer in the negative, given by "that very ingenious and studious promoter of real knowledge, the learned and worthy Mr. Molineux," to a problem propounded by himself, and quoted by Mr. Locke in his Essay concerning Human Understanding, as to "whether a man born blind, and now adult, having learned to distinguish, by the touch, between a sphere and a cube, could, if restored to sight, tell by the eye alone which is the cube and which the sphere?"

In speaking of punishment, the author condemns as one of the most injurious forms the withdrawal of necessary food; and he appeals to the writings of Charles Dickens, and to the story of Jane Eyre, by Charlotte Brontë (Currer Bell), in support of his belief that some "private educational institutions in England, which, agreeably to the individual liberty of the

English, are under no State control, are especially notorious in this respect." Dr. Heyfelder also very justly condemns the adoption of a withdrawal or diminution of sleep as a means of punishment. He points out the many evils which flow from the unnatural and reprehensible custom too prevalent in all countries and ranks of life, of threatening children with a bugbear or black or wicked man, "who is so naturalized in our Fatherland that he occurs almost in every province under a specific form and proper name, derived either from historic recollections or local association. Thus in the chain of mountains between Silesia and Bohemia, we are threatened with Number Nip (Rübezahl); in Thuringia, with Quintus (Carolus Quintus); in Franconia, with Pelzmärtel; in Switzerland, with Bölliman, or the child-eater; in Suabia, with the harmless Kaminfeger." Confinement, judiciously used, is a suitable punishment, to which there is no objection on medical grounds, but it must not be so employed as to add terror to loss of liberty.

The author next enters at some length into the consideration of the evils which result from premature bodily and mental exertion. It will be seen that his volume is not one merely of medical interest: it is calculated to be useful not only to the physician, but also to the statesman, the lawyer, the clergyman, the teacher, and the parent,—to all, in fact, who have to do in any way with the physical and moral education of youth. Dr. Heyfelder's present work is one from which extracts might be advantageously introduced into some of the numerous popular miscellanies, whose abundant issue from the press is a striking characteristic of our day.

Notes on the Cholera at Varna in 1854, *and more especially in Her Majesty's ship "Agamemnon," in the Black Sea, between the* 1*st August*, 1854, *and* 8*th September*, 1855. By George Mackay, M.D., &c., Staff Surgeon, Royal Naval Hospital, Plymouth, &c. Edinburgh: Murray and Gibb. pp. 43.

A Copy of the Medical Statistical Returns of the Baltic and Black Sea Fleets, during the years 1854 *and* 1855. Ordered by the House of Commons to be printed, 27th February, 1857. pp. 115.

The little pamphlet which heads this notice is intended by its author as a contribution to the records of cholera, in which he endeavours to show the contagious nature of that

malady, and to trace its rise in the British army and fleet from the infection imported by the French troops from France, directly. In the Preface he says:—

"Believing that the epidemic which appeared amongst the allied troops, at Varna, in July, 1854, and afterwards in the fleets at Baljïk, can be traced to its source in France, where it was known to exist in March of that year; and that its subsequent course can be fairly tracked in the company of the troops across the Black Sea to the Crimea, the Alma, Balaklava, and as far as the Straits of Kertch: I am anxious to bring the question of its origin more prominently before the profession, with the view of directing attention to the inestimable advantages that would accrue to our fleets and armies were they to adopt certain preventive measures, whenever exposed to the contagious influence of the disease."

And again:—

"If the view here advocated be the correct one (and it is one entertained by not a few of our medical brethren), then the inference, in the single instance of the outbreak in the allied fleets at Baljïk, is unavoidable, viz., *that an immediate removal from the infected locality*, or, failing that, the adoption of a few simple but stringently preventive measures, would, in all human probability, have saved the lives of hundreds of men."

We quite agree with the latter quotation, and we have italicised what we consider the pith of the observation: "immediate removal from the *infected locality*" being unquestionably the only certain way of staying the progress of epidemic cholera.

In the limited space which we can devote to a notice of this little *brochure*, we do not intend to argue the question of contagion or non-contagion, beyond examining the facts upon which the author depends for the maintenance of his proposition, that "this dire scourge [the cholera], which committed such ravages amongst the allied troops in Bulgaria, and the allied fleets anchored off its coast, was, in my opinion, undoubtedly imported from Marseilles and Gallipoli by the numerous levies of French troops, which were frequently arriving to swell the strength of the army preparing for the invasion of the Crimea."

After stating the various heavy duties which had been performed by the "Fleet," and by the "Agamemnon" in particular, the author relates his experience of the outbreak of cholera at Varna, coast of Bulgaria. He says:—

"A sporadic case of cholera occurred in the French camp on the 17th of June, 1854, and another case on the 3rd July; but as

200 French troops had arrived in the French steamer 'Caçique,' from Gallipoli, and other troops followed them almost daily, it is not unreasonable to infer, that the disease, which, since 1848, was unknown at Varna and its neighbourhood until after their arrival, accompanied them in their transit. And this inference is strengthened by the fact that the French war steamer, 'Dauphin,' sent a case of cholera to the French military hospital at Varna on the 10th July, the same day that she arrived from Gallipoli. Up to that date no case of cholera had appeared or been received into that hospital; but after that, viz., on the 11th July, two of the patients in the hospital were attacked, and died; next day, three or four more; two fresh cases came in on the 14th July, and died; after which the number of cases increased daily. Several of these were from the French transports in the bay; but the greater number from the troops encamped on the plain at the foot of the hills.

"The first decided case amongst the British troops in Bulgaria occurred in the British military hospital at Varna on the 21st July, according to Mr. Deas, then Deputy Inspector of Hospitals and Fleets; but, according to my notes, taken during a conversation on the 28th July with Dr. Hall, the Army Inspector-General, the first case occurred in the hospital on the 22nd July, on the evening of which day the disease broke out with great virulence amongst our troops at Devnagh."

Now all this, no doubt, would be seized upon by the contagionist as proof of the strongest character that the cholera was imported directly from France, where the disease then admittedly prevailed; but, on the other hand, the non-contagionist would ask, did cases of cholera prevail on board the French transports or war steamers until they had arrived at the coast of Bulgaria, where, according to the author, diarrhœa had for some time prevailed in both the allied armies and fleets? Now, as it is not reported that any cases of cholera had appeared in the French ships of war or transports before their arrival at Varna, or its neighbourhood, and as diarrhœa admittedly prevailed in all the ships on the coast of and among the troops in Bulgaria, the non-contagionist would argue that the choleraic tendency had prevailed at Varna for some time; and that the cause of the outbreak is to be attributed to the many local exciting sources, easily discovered in the marshes around Varna, the Lake Devnagh, and the crowded and filthy state of the town itself, besides the admitted defective sanitary arrangements in the allied armies and among the crowded transports. And he would further say, the sudden outbreak of the disease, "with great virulence, amongst our troops at Devnagh," cannot be accounted for by any direct contagion, but by the exciting influences of the locality.

Regarding the cases of cholera which took place on board the "Agamemnon," it appears from the "Notes" of Dr. Mackay, who was then Surgeon of that ship, that, between the 1st of August, 1854, and 8th of September, 1855, thirty-one occurred, of which twenty-four died, and that twenty-two of the cases were "clearly traceable to cases exterior to the 'Agamemnon;' the patients being men who were taken ill, either on board the transports, in which they were at work, or shortly afterwards." It also appears that the disease, though appearing daily among the working party employed in the transports, and who were received on board the Agamemnon, did not spread among the part of the crew not exposed to the exciting influences of an "*infected locality*" either on shore or on board a foul transport; hence the non-contagionist would be led to infer that there is strong conclusive evidence in the "Notes" of Dr. Mackay, that the disease might not have been propagated by contagion, but by the poison of an infected locality. Indeed, throughout the "Notes," in nearly every instance related, such is the evidence, and such might be the deduction; we, therefore, cannot regard his evidence, if taken by itself, as conclusive evidence of the contagion of this disease, and which has been repeatedly asserted in our pages, but on much better grounds. In the present instance we have merely examined the evidence before us, and we do not find that it bears out the view the author seems to entertain, that cholera is imparted from a person labouring under the disease to a healthy individual, both at the time of contact being in an *uninfected* locality; on the other hand, there is abundant proof, as there has been in thousands of other instances, that certain places, in certain conditions of the atmosphere, a town, a house, a ship, became foci of infection, frequently imparting the disease to every one who has the misfortune to remain within their influence for a certain limited space of time. At all events, whatever previous views the professional reader may entertain, he cannot but be instructed by a perusal of the interesting "Notes" on the cholera at "Varna," and on board the "Agamemnon," as put forth by Dr. Mackay, late Surgeon of that ship; and he will not fail to give that gentleman credit for the strict impartiality with which he has performed his task, and will admire the spirit of candour and truth which pervades his published "Notes."

We find that Dr. Mackay, like most others, discovered that cholera was not very amenable to treatment, and that at certain times it became quite intractable, cutting life short in a very few hours. He seems to have found calomel the most effective remedy, and gave it in various ways, both in large

and small doses. He tried the absurd "castor-oil treatment," but immediately and sensibly dropped it, when he found it to be worse than useless. One or two other means he mentions which had often been tried before—and what has not been tried?—but did not find them to answer his expectations, in fact, to come up to the character he had heard of them. So, alas! have we all, when induced to try the pet, vaunted remedies of others! With regard to the prophylactic measures adopted by Dr. Mackay there can be only one opinion, that they were highly judicious.

In the part of the Preface which we have already quoted, the author has struck upon the certain means of staying the progress of cholera, or, indeed, plague or yellow fever,—"immediate removal from the infected locality." Be the disease in a house, a street, a town, or a ship, remove the sick, remove the healthy; cleanse, purify, ventilate the infected locality; find out the sanitary sore, heal *that*, and the pestilence will disappear as the chilling mists of morn roll away before the rising sun.

"The Medical Statistical Returns of the Baltic and Black Sea Fleets" we can recommend to the notice of our readers, as they contain a vast amount of useful information, carefully compiled by Dr. Bryson, of the Admiralty, Somerset House. Regarding them, Dr. Bryson says:—

"The following Report on the Health of the Baltic and Black Sea Fleets, drawn up from the Medical Returns in the office of the Director-General, does not materially differ from the Reports on the Health of the Navy which have preceded it. An attempt, however, has been made, in the present instance, to ascertain the relative amount of sickness in the respective vessels, by adding together the number of days each patient remained in the surgeon's list, and dividing the sum by the number of days in the year, the quotient will thus show the average number of men sick daily throughout the year; and in the same manner the loss of service or labour through wounds and sickness in a whole fleet may be ascertained."

In illustration of this the Report states:—

"Thus, as is shown in Table II., the total number of days of sickness in the 'Britannia' amounted to 15,142, which, in a crew of about 920 men, shows a loss equal to 41·5 men daily in the complement during the entire year. In the 'Trafalgar' the loss was equal to about 47·6 in 960, the proportionate loss in these two vessels being about the same, namely, 4·4 per cent. In the 'Queen,' with a crew of 970 men, the loss was equal to 31, or 3·2 per cent.: whereas in the 'Albion,' with a crew of 730 men, it was 38, or in the proportion of 5·2 per cent."

And so on, the Report gives many other comparative instances, and which, under the head of the various diseases, shows from what each ship suffered most. It would be impossible for us to attempt anything like an analysis of these important "Medical Statistics," and we can only say that every medical practitioner, but especially the medical officers of her Majesty's fleets, will reap both interesting information and profit from a close examination of this important "Return."

Discussion i det Norske Medicinske Selskab i Christiania angaaende Syphilisationen. (Copie af Norsk Magazin for Lægevidenskaben.) Stockholm: Carl C. Werner og Comp. 1857. 8vo, pp. 162.

Discussion in the Norwegian Medical Society of Christiania on the Subject of Syphilization. (Extracted from the Norwegian Magazine of Medical Science.)

Undersögelser angaaende Inoculation af Vaccine-og Chankermaterie, for at constatere Immunitetsforholdene og deres Consequentser. Ved Dr. F. C. Faye, Professor i Accouchement, Fruentimmer- og Börnesygdomme ved Universitetet; Overlæge ved Födselsstiftelsen og Börnehospitalet i Christiania. (Copie af Norsk Magazin for Lægevidenskaben.) Christiania: Trykt i Carl C. Werner og Comp.s Bogtrykkeri, June, 1857. 8vo, pp. 70.

Investigations concerning the Inoculation of the Matter of Cowpock and of Chancre, with a view to establish the conditions of immunity, and their consequences. By Dr. F. C. Faye, Professor of Midwifery, and of the Diseases of Women and Children, in the University of Norway; Principal Physician to the Lying-in Institution, and to the Hospital for Children at Christiania. (Extracted from the Norsk Magazin for Laegevidenskaben.) Christiania: Printed by Carl C. Werner and Co. June, 1857.

The discussion reported in the first of the above-named volumes occupied the Medical Society of Christiania during eight meetings, on which occasions Professor Faye, who originated the discussion, and Professor W. Boeck, who has already placed his views on syphilization before our readers in a special communication to this Journal (vol. xxiii. p. 77) were among the principal speakers. Professor Faye has since undertaken a more accurate investigation of the subject, and has instituted

some experiments on inoculation with vaccine matter and with the matter of chancre, in order to compare the respective degrees of immunity which may probably be thus obtained. He was led to adopt this course in consequence of the expression of opinions during the discussion which—"make it doubtful whether our knowledge with reference to the alterative power of vaccination on the system is to be depended on, and whether it is based upon sufficient experience that this operation affords in the first place a certain immunity, though for an undefined period, from the action of vaccine matter itself; and secondly, in virtue of a supposed relationship to the effects of variolous matter, from the action of small-pox."

Secondly, the discussion alluded to elicited "a difference of opinion as to whether the virus developed in a chancre produces, after a greater or less number of inoculations, a real immunity similar to that supposed to be obtained in vaccina and variola; in considering which, the degree of intensity of the matter, in connexion with the receptivity of the skin or organism, must be taken into account. It is clear enough that the solution of these questions will always be of importance, because without it physiological, not less than practical, considerations want a solid foundation; and the results will, in many respects, continue unsatisfactory both to the profession and the public, so far as the general interests of society are involved. The intention I announced during the discussion, that I would myself investigate this subject, I immediately proceeded to carry out; and I now venture to submit the result to the judgment of my colleagues, and to closer examination, both at home and abroad."

The author states the following as the results of the investigations of able English, French, and German physiologists on the important question whether the vaccine and variolous principles are so nearly related in their reciprocal influence as to endow vaccination with the power of rendering the system proof against the action of variola.

"1. Vaccination well performed and tested with a negative result, either by repeated deep vaccination, or by inoculation with variolous matter, affords in a great majority of cases immunity for life from the effects of the variolous poison, even under epidemic conditions.

"2. Variolous fever will, if it breaks out after effectual vaccination, in general be lighter and less dangerous to life, and will produce a less characteristic varioloid exanthema. Neither of the two exanthemas affords absolute immunity for life from its own action, and consequently not reciprocally from that of

the other, in which respect vaccine will of course sooner fail as a protection against variola than *vice versâ*."

Professor Faye recommends as a test, and in persons who have shown themselves refractory, a deeper mode of vaccination than is usually adopted, either by introducing the matter on lint into an incised wound after the bleeding has ceased, or by using a broad thick lancet with a furrow on one surface, in which the matter can be taken up in greater quantity, or by injecting a drop into the subcutaneous tissue. He details some investigations on different individuals from the age of four days up to thirty years, and adds:—

"All these experiments, which have been continued, therefore seem evidently to indicate the existence of a true immunity of the system, and that the process of vaccination, if properly performed, in general renders the organism unsusceptible, probably for a tolerably long time, of a fresh ferment and genuine eruption; a conclusion which also agrees with the usual results of revaccination on young persons. With respect to local receptivity, the thighs seem to take precedence of the arms, and the latter of the chest; but this difference has of course no influence on the zymotic process and the final immunity."

Professor Faye is inclined to allow his love of science to carry him too far: he proposes to perform a personal experiment, which we trust he will on maturer consideration forego. Little can be learned from an isolated fact, and should he be the subject of an idiosyncrasy rendering him liable to a second attack of small-pox, the trial he contemplates might deprive medical science of one of its most zealous cultivators. He continues:—

"As a long time has now elapsed since we acquired our experience of the effect of the inoculation of true variola after previous deep vaccination, it will be interesting to learn, a little more accurately, whether our present mode of vaccinating and vaccination in general affords security, and to what extent the change in the system in reference to inoculation with variola renders it unsusceptible of any general or local effect from fresh inoculation.

"I was myself vaccinated in infancy; and subsequently, in my twenty-fifth year, now twenty-five years ago, I had an attack of varioloid, of which I still retain some marks. I therefore presume that I ought to be secure against inoculation with variola, at all events when I have once more tried vaccination, and it is therefore my intention, on the next outbreak of the disease here, to take an opportunity of inoculating myself to learn the result."

With reference to the opinion entertained by some, that

vaccine matter, in passing through many individuals, perhaps through many generations, must necessarily be weakened, Professor Faye holds that the fact of its being constantly elaborated in new organisms, and often emanating from individuals with increased strength, must render such a diminution of power most unlikely.

The second portion of Professor Faye's work is devoted to an examination of the facts and reasons on which the doctrine of immunity by syphilization mainly rests, and to a comparison of the state produced by that operation with the direct and reciprocal condition of immunity obtained by inoculation with variola and vaccina, with reference to a renewed action of the respective matters on the system.

The author's opinion seems to be less favourable to the adoption of syphilization as a cure than it was before he commenced his own experiments, for he draws from them the conclusion that "as certainly as individuals who are entirely free from syphilis, and those who are constitutionally syphilitic, are susceptible of new local symptoms, so certainly will syphilized persons, both those who have used mercury, and those who have not employed this medicine (on which point it is difficult to attain to any degree of certainty with respect to its earlier use in other diseases), to the best of my judgment, be susceptible of the local effect of the venereal virus, immunity in the true sense of the word is not consistent with physiology and pathology.

"Any one who entertains a doubt on this subject will be able to decide the question on individuals who are constitutionally syphilitic, or syphilized to supposed immunity and cure, or who enjoy immunity and are not cured (tertiary syphilis), whether they have used mercury or not, by dressing an ulcer with syphilitic matter for a shorter or longer time, according as the virus is present in greater or less intensity, and he will find the sore to assume a specific character, and subsequently to yield inoculable pus in large quantity. If this experiment be tried on a young person with a susceptible skin, and crossed again in other persons, the syphilitic matter will even acquire greater intensity, if before use it has been weak and not inoculable on a superficial and cursory puncture. Or fresh pus may be daily introduced into a little channel between the layers of the skin, and the same result will be attained with incontestible certainty, even if the cutaneous system possesses but little vitality, and has long been exposed to ulcerous secretion. If uncertainty still remain, the vascular network of the skin may be stimulated with other non-specific

irritants, and syphilitic matter will convert the sore into a specific secreting surface. It will in general be unnecessary to introduce matter into the areolar tissue as a test of its virulence. On the other hand, this mode, which, as has been mentioned, readily produces a great effect, might be employed as syphilization treatment in patients who have already long been inoculated without success and without cure; for in such cases, in which also no phagedena is to be apprehended, the syphilizators who, as in artificial inoculation with variola or careful vaccination, must wish for reaction in connexion with the local manifestation, seem to be able to attain their object with their treatment.

"In the large venereal hospitals the experiments described on the nature of the matter are easily instituted; and although, for my part, I was convinced before I experimented that there was no true immunity, I am now assured of it on a more certain foundation." Now the discussion shows that Professor Boeck divides immunity into different species, such as local immunity, immunity from a certain matter, temporary immunity, &c. But such division does not agree with our usual physiological notion of the word immunity. "Further," continues Professor Faye, "I should be glad that any one, either at home or abroad, should investigate the fact brought forward in evidence, that art is capable of imitating nature by the transference of syphilitic virus to the surface of the body, with a subsequent spontaneous production of new virus from the infected part. That this will also take place on the more vital parts of the head, is scarcely subject to doubt, although Ricord has not yet met primary inoculable chancre there. If, for example, the lip and mouth can be inoculated naturally between the nurse's breast and the child's mouth, and *vice versâ*, which few now doubt, it is clear enough that by a similar prolonged contact the same effect may be artificially produced. We must only bear in mind that the point of the lancet and superficial contact with the layer of skin under the epidermis does not afford any proof of immunity, or any true imitation of the absorption which takes place on repeated, intimate, and long-continued contact.

"Reasoning from such imperfect artificial experimentation is also dangerous, when it affects the decision of the question so important to society, whether secondary syphilis is inoculable; for it may lead to a false security.

"A totally different question is, whether an individual can a second time become constitutionally syphilitic, or acquire a new and independent indurated chancre, which Ricord fur-

thermore denies; as this inquiry does not touch on that of the transferability of syphilitic matter from the surface of one individual to that of another. On this point, too, syphilization seems to be isolated and inexplicable; for if the system had become really pure and free from all syphilitic taint, it could scarcely, according to our knowledge of the mode of operation of the syphilitic virus, be safe against fresh action, but must, on the contrary, be assumed to be again susceptible."

Among the experiments of Dr. Faye, by which he seems to prove that the matter may increase in intensity by passing alternately from one individual to another,—a conclusion to which the syphilizators appear also to have come,—there is one we cannot avoid alluding to, because it is very interesting, in reference to the question of inoculability or non-inoculability of the syphilitic virus. These experiments relate to a person having a true indurated chancre on the genitals, which yielded matter non-inoculable by the ordinary mode (though it was tried sixty times on eight different individuals), as is usually the case when the chancre becomes indurated, and the system contaminated; still, this matter, after being inserted on threads of lint into the skin of the arm of the same person, produced a characteristic chancre, yielding a matter easily inoculable on the same individual, and on other persons for a long series. This experiment Dr. Faye thinks very remarkable, because it seems clearly to prove that pus containing the syphilitic virus so weak that it may be thought harmless according to the ordinary mode of experimentation, may still retain its natural virulence, which may be strengthened by more careful inoculation. These opinions seem also to be in concurrence with general experience, as is well shown by Dr. Porter in his Essays on Syphilis in this Journal, and are illustrated by the history of British troops acquiring the disease in other countries and climates; and Dr. Faye quotes Professor Porter in support of his views. Dr. Faye is inclined, furthermore, to infer from these experiments that it might be possible to take the product from secreting secondary affections, and to make it, by a series of careful successive inoculations, so intense, that it at last might be continued by simple inoculation,—thus proving that secondary affections, as Wallace of Dublin, Waller in Prague, and Renecker in Würzburg, have shown, are not only transmissible, but that the syphilitic poison is probably one and the same, and differs only with regard to the intensity and individual constitutions. If this be true, it would most satisfactorily simplify our at present confused ideas about the different primary (soft and indurated), and secondary and ter-

tiary affections, &c. From all that has been brought forward it seems clear that the essential difference between the effects of the virus of vaccina or variola, and syphilis, is this, that in the first two the virus, as a ferment, is immediately absorbed, producing a blood disease, of which the eruption is only a localization or sign; but, on the other hand, that the syphilitic virus is from the first a local irritant poison, the effect of which may be destroyed in the first four or five days without any bad effects on the system; and if afterwards absorbed, it causes a chronic constitutional poisoned state of the organism.

With regard to the mode of action of the curative chancre inoculation, as Professor Faye calls it, he and Dr. Steffens believe,—while he acknowledges that many apparent cures have been obtained, and that relapses in non-mercurialized persons have been comparatively more rare than after mercurial treatment in the Syphilitic Hospital of Norway,—that cure takes place by suppurative depuration of the system from the many hundred ulcers produced in the course of the syphilization. Such a mode of action, Professor Faye thinks, is analogous to what we know of the depuration of the organism under suppurative derivation caused by furuncles and other suppurations, combined with the effects of a good diet. Medical men, in ancient times, were well aware that the production of artificial ulcers greatly assisted the healing of inveterate ulcers; and every syphilologist knows well that profusely suppurative buboes preserve the organism from general infection. At all events, the author thinks it quite unphysiological to entertain the idea of any process like the zymosis of acute diseases in such a chronic disease as syphilis, because an absorption of the virus from the genitals usually poisons the organism for the entire of life; and not only does not wear itself out in the same individual, but infects the next generation too; and it would be quite irrational and contradictory to suppose that a repetition of a series of ulcers on the skin could produce a healthy circulation of the same poison in the organism, as the syphilizators suppose.

We have thought it better to give Professor Faye's opinion on the foregoing subject in his own words. Our readers have now before them the views of two of the most distinguished members of the Scandinavian medical school, who have fully investigated the question, and they will thus be enabled to draw their own inferences as to its merits.

1. *Kort öfversigt af epidemiska sjukdomar i Sverige under år* 1855. Af Dr. A. Timoleon Wistrand. (Aftryck utur Hygiea.)

A brief Review of the Diseases Epidemic in Sweden during the year 1855. By Dr. A. Timoleon Wistrand. (Reprinted from the Hygiea.) Pp. 23.

2. *Infusorier, såsom Intestinaldjur hos Menniskan.* Af Prof. Dr. P. H. Malmsten. (Med 1 planche.) Stockholm: 1857. P. A. Norstedt och Söner.

On the Occurrence of Infusoria as Intestinal Animalcules in Man. By Professor P. H. Malmsten. 8vo, pp. 13. (With a Plate.)

3. *Undersöknings-metoder och reaktions-prof som begagnas vid det Kemiskt-Patologiska Laboratorium i Wien, medd.* Af Dr. N. P. Hamberg. (Aftryck utur Hygiea.)

On the Modes of Investigation, and on the Tests employed in the Chemico-Pathological Laboratory in Vienna. Communicated by Dr. N. P. Hamberg. (Reprinted from the Hygiea.) Pp. 19.

4. *Om Komjölk och dess Grädda.* Af Dr. N. P. Hamberg. Aftryck ur Arrhenii Tidskrift för Landtmanna- och Kommunal-Ekonomien för 1856, 4de häftet. Upsala, Wahlström och C. 1856.

On Cow's Milk and its Cream. By Dr. N. P. Hamberg. Reprinted from the Fourth Number for 1856 of Arrhenius' Journal of Agricultural and Social Economy. Pp. 14.

The industry of our Swedish brethren again compels us to class together in a single article a rather heterogeneous collection of essays. We are, however, always most happy to receive the valuable and varied contributions of the profession in Scandinavia to medicine and its collateral sciences.

1. Dr. Wistrand states that in addition to the various inflammatory, catarrhal, and rheumatic fevers occurring according to the season of the year, and which were more or less general in almost every part of the kingdom, the principal epidemics in 1855 were small-pox, scarlatina, and measles, with the usual sequelæ of these exanthemata, hooping-cough and mumps; also gastric and nervous fevers, and dysentery, cholera, and ague, diarrhœa and croup. Boils and whitlows, too,

were in many places more than usually prevalent during the year.

The characters of the seasons were, in opposition to those of the four years immediately preceding, a cold and long winter, a late spring, with little rain, hail, or snow; an equable, warm, and dry summer; and, after a mild autumn, an early return of the cold of winter; in consequence of the trifling fall of rain, the water-level in the several rivers and lakes was unusually low; the harvest, which suffered from the cold of the spring and the drought of summer, yielded a very moderate produce, the quality being, however, in general particularly good.

Small-pox, which had gradually increased from 1847 until it became an epidemic of thousands of cases over all Sweden, attaining its culminating point in 1851, and afterwards diminishing year by year, seems to have closed its epidemic career in 1855.

Scarlatina was less prevalent than in the years immediately preceding. It was in general of a mild character, and except in a few localities was unattended with the swelling of the throat, cerebral congestion, or dropsical sequelæ, which frequently accompanied the epidemic during the previous years.

Measles were very prevalent in 1855, but were in general of mild character.

Croup occurred only sporadically.

Cholera appeared in 1855 in many more localities than during the preceding year, but for the most part the cases were few in each, so that the total numbers of those attacked and of deaths were not so large as might have been expected. The disease prevailed chiefly in the lowlands, or those situations which were less than 300 feet above the level of the sea. The epidemic lasted for about seven months, from the 28th of July, 1855, to the 7th of March, 1856, which was longer than the duration of any prevous epidemic of the disease[a]. The total number of those attacked was 4066, being 1·11 in every thousand of the population; the mortality was 56·3 per cent. In the towns the proportion attacked was 8·6 in 1000, and the mortality was 56·8 per cent., while in the country only 0·2 per thousand sickened, but the mortality was so high as 59·5 of those attacked. The sexes were very equally divided, for of 1829 fatal cases of which the sex is stated, 914 were men, and 915 women.

[a] A reference to Dr. Berg's work, formerly noticed in this Journal, shows that the great epidemics of 1834 and 1850 each lasted for about five months.—Rev.

Dysentery was epidemic in some localities, and was not confined to those of less elevation than 300 feet; on the contrary, it showed itself even so high as 800 feet above the level of the sea. The mortality was very great, averaging in three districts 38·1 per cent. of those attacked. The disease appeared to be milder in the towns than in the country parts.

Ague was indisputably the most prevalent disease of the year, and occurred in all parts of the kingdom much more extensively than during the preceding twelve months.

We have culled the points in Dr. Wistrand's very valuable Report which we thought most likely to interest the profession at large. The author enters, in addition, into many details of great importance to his fellow-countryman.

2. The intestinal animalcules described by Professor Malmsten were first observed in the case of Henrik B., aged 38, a boatswain, who had enjoyed good health until he got an attack of cholera two years previously to his admission into hospital on the 22nd of March, 1856. His recovery from the attack was tedious, and he had since suffered much from indigestion, and a lienteric and dysenteric state of the bowels. On examining the *recent* discharges, the parasites in question were found in great numbers. They were roundly ovate, somewhat pointed anteriorly, and were about one-tenth of a millimetre in length. Their shape, however, altered somewhat under different circumstances. They performed rapid rotary movements in the mucus. Externally they were densely studded with ciliæ; anteriorly, somewhat to the side of the point, the mouth was observed furnished with longer ciliæ; posteriorly, inclining rather to the abdominal surface, was the anal opening, sometimes drawn in, sometimes prominent. Internally were observed the so-called nucleus; two contractile vesicles, one larger, more posteriorly near the anal opening, the other smaller, more in the middle, and towards the dorsal surface; and portions of food, consisting for the most part of more or less digested starch cells and fat globules. These various parts and appearances are beautifully represented in a well-executed plate, containing six figures, from drawings by Professor Sv. Lovén. The author proposes to call the animalcule *Paramecium coli.* This case was "witnessed by Professors A. Retzius, Huss, and von Düben, of Stockholm; Professor C. Boeck and Dr. Vogt, of Christiania; and Dr. Neligan, of Dublin."

The second case in which the paramecium coli was observed was that of Christina Lindström, aged 35, ten years

married, and mother of three children. She stated that, with the exception of ague twelve years previously, which lasted for seven weeks, and of one day's cholerine in the summer of 1853, she enjoyed good health and strength until September, 1854, when, after lifting a tub, she began to feel a painful retraction and heat in the left side under the angle of the ribs. The pain was fixed, and was increased by pressure or effort, but diminished when she lay still. Lienteric diarrhœa soon came on, after which the pain in the side became somewhat less. The diarrhœa continued occasionally, and in various degrees, until the 13th of May, 1855, when she died. The discharges were latterly examined microscopically, and the infusoria above described were observed in very great numbers, mixed with pus, and exhibiting a great degree of motion. On post-mortem examination it was found that the animalcules were confined to the portion of the intestinal tube situated below the valve of the colon, and that they were most numerous in the mucus taken from the parts of the great intestine, where the mucous membrane was sound. Other portions of this membrane were in a state of gangrenous ulceration.

Ehrenberg, observes the author, in his celebrated work, "Die Infusions Thierchen als volkommene Organismen," writes that, "according to Leuwenhoek three species of infusoria occur in the intestinal mucus of man, which I have often sought in vain." Professor Malmsten states that he himself has been for many years engaged in the microscopic examination of the fæces in searching for the ova of intestinal worms, and that he was therefore glad to have the first case verified by several persons. He suggests that the existence of these infusoria may hereafter be found to be connected with the diseased state called lientery, for their presence in such enormous numbers would not only increase the intestinal secretion, but also the peristaltic motion of the bowels. He considers it most probable that these animalcules are analogous to other entozoa occurring in man, and that they have often escaped observation in consequence of the rapidity with which they perish when expelled from the bowel. This point should be borne in mind in future investigations.

As to the treatment, or rather the expulsion, of these infusoria, it is evident that as they are confined to the large intestine, enemata must be the most effectual means of extirpating them. The author promises, however, to institute experiments on this point on his first patient, who will probably soon return to the hospital.

3. The third work on our list need not detain us long; it

is a Swedish version of the account originally published in the Norwegian language by Dr. Ludvig Dahl (of the English translation of which by Dr. Moore an ample notice has been given in our twentieth volume) of the mode of investigation taught by Professor Florian Heller in the Chemico-pathological Laboratory at Vienna.

4. Dr. Hamberg states the specific gravity of cream when perfectly separated from the milk to be so low as, in one instance, 1·00487; in another, 1·00548. That the specific gravity is usually stated as much higher depends, according to him, on the imperfect separation of the milk from the specimens examined. From 100 parts of cream taken from milk of specific gravity 1·0309, he obtained 29·455 parts of butter. As the latter is practically the most important constituent of the cream, the author appends some observations in reference to it. He found the amount of butter obtained from cream to be greatly influenced by the nature of the food. Thus, in a specimen of cream obtained from an estate where the pasturage was particularly rich, the per-centage of butter was so high as 34·75. In a series of experiments on cream taken from grass-fed cows in the neighbourhood of Stockholm, Dr. Hamberg found the amount of butter to vary from 23 to 29 per cent., while during stall-feeding it fell to 20 or 21 parts in the 100.

The temperature at which the cream is separated has a great effect upon its amount and upon its per-centage of butter. A portion of milk was divided into three parts, one of which was allowed to stand for twelve hours at a temperature of 55° F., another at 64°, and the third at 95°. The lowest temperature afforded the largest quantity of cream, but it was thinner, and contained less butter than the other specimens. The highest temperature yielded the thickest cream, but the latter was rather sour; the amount of solid constituents was greater in it than in either of the other samples, but this was not owing to an increase of the butter, but of the casein. The greatest amount of butter was obtained at the medium temperature. The hay or grass from highland meadows or pastures produces a better and more aromatic milk than that from marshy ground or lowlands.

Of the essays we have now reviewed, Dr. Wistrand's is a contribution to the study of epidemic and endemic disease; a field of observation, the importance of cultivating which we have before endeavoured to impress upon our readers. Professor Malmsten's observations on the paramecium coli are ex-

tremely interesting, and are likely to prove of great practical importance, and to them we would especially call the attention of the profession. Dr. Hamberg's investigations are valuable not only in an economic point of view, but as contributing to our knowledge of the composition and properties of the typical nutriment prepared for us, as well as for other mammalia, by nature.

Observations on the Report of the Sanitary Commissioners in the Crimea during the years 1855 *and* 1856. By Sir John Hall, M.D., K.C.B.; Inspector-General of Hospitals. London: Clowes and Co. 1857. 8vo, pp. 64.

The pamphlet before us is one that we cannot but look upon with regret, inasmuch as it has been *forced* upon its author by the acts of a professional brother.

Dr. Sutherland has endeavoured in the Report upon which Sir John Hall founds his "Observations" to take credit to himself for the introduction into the British hospitals and camp of all the sanitary arrangements (but which, in reality he found in operation), and so successfully did he accomplish his end, that Lord Palmerston in the House of Commons declared "that the excellent condition of the military hospitals in the Crimea was attributable to the advice and suggestions of Dr. Sutherland, and of the Sanitary Commissioners."

It is under these circumstances that Sir John Hall (in defence of his own character, and the characters of his brother officers in the Crimea) feels called upon to give the most unqualified denial to the statement of the Prime Minister, and to show, by the quotation of official documents, dates, and facts, that his Lordship has been entirely misled; and that, so far from the comfort and health experienced, towards the middle and latter end of the campaign, by our troops, depending upon the acts of Dr. Sutherland and his colleagues, "that neither he nor any other member of the Sanitary Commission had anything whatever to do either with the organization or management of the military hospitals in the Crimea; and that, so far as their suggestions on sanitary matters in the Crimea are concerned, it was admitted by themselves that almost everything they could think of was either in actual operation, or had been recommended by the Medical Department of the army before their arrival." It is therefore hard, it is unjust, and it is ungenerous, that any man should so write an account of his own acts and deeds as to lead those reading to suppose, not only

that he himself is what he is not, but also to prejudice the characters of others. Dr. Sutherland has done this: he has worded his "Report" in language so equivocal as to have misled even Lord Palmerston himself, and to have detracted from those to whom was justly due the merit which his Lordship was willing to award. Dr. Sutherland was well aware, when sitting down to pen the "Report" in question, that, arriving in the East, he did but *continue* (on an enlarged scale by means of the staff placed at his disposal) measures which he found in operation. He knew that months before "the position of the camps, the removal of nuisances," "the burial of the dead," "the covering in of deceased animals," "the formation of privies," "the overcrowding of wards and huts," "the ventilation of hospitals," "the state of Balaklava, &c. &c.,"—these and all the other matters of which he treats had been the subjects of direct and special correspondence, and the care of those under whose charge and province they legitimately came, but whose agency Dr. Sutherland found it convenient to ignore.

What a very different opinion in public estimation would Dr. Sutherland have held, had he, instead of recording the number of "barrowfuls of refuse removed," of "hand-carts of filth and rubbish cleared away;" "the numbers of men engaged in sweeping" this day, and the fact of "a dead horse lying near the hospital being buried" upon that,—instead of embodying his opinions in these words, namely,—"that as scurvy, and the forms of disease connected with it, almost disappeared from the army under the influence of improved diet, clothing, &c. &c., so in like manner had zymotic diseases (the destructive effects of which mainly depend on breathing a humid, tainted atmosphere) *declined on the carrying out of suitable sanitary works and measures*"[a], thereby implying that "these sanitary" works were the result of the Sanitary Commission;—had he, on the contrary, openly said, "My Lord, we found nothing to suggest that had not been suggested before, but this, namely, that the letter of instructions which we had the honour to receive from you, dated February 19, 1855, *empowering us to act*, and not directing us "to rest content with issuing an order, but to see instantly, by ourselves or by our agents, to the commencement of the work, and to its superintendence, day by day, until finished;"—had he recommended that this letter should be handed over to the head of the Military Medical Command, and be made the standing regulations of the service:—then the army and the

[a] The italics are our own.

nation would have for ever after been under obligations to him.

Had Dr. Sutherland, after seeing the facility with which *he* could get carried out any plan or suggestion of value, and knowing that it was the want of this facility of action which had alone impeded the progress of sanitary measures previously, written to the Minister for War and said so, he would have acquired for himself an imperishable fame; for he would have been the recorded source and origin of those modifications and improvements in our military medical regime which hereafter *must take place.* This, however, was not the course that Dr. Sutherland adopted. He took another line, and tried to show that the improved health of the army was the result of his own superior labours. Left alone, such an explanation might do well enough, but, brought to the test of analysis, and subjected to the cross-examination under which Sir John Hall has placed it, it gives a very different result. It exposes the fact of a most vicious system existing in the Medical Department of the army, whereby the head of the medical staff, whilst charged with the preservation of the health of the force, and responsible for it, has really no power whatever to carry his plans into effect; whilst it exhibits Dr. Sutherland in the unenviable light of suppressing the fact of all the recommendations which he offers as his own having been already made by Sir John Hall, and stamps him as guilty of as complete piracy as any act of literary or scientific plagiarism.

It is a painful subject to dwell on, and we would fain close our pages to remarks on Dr. Sutherland's Report, which cannot be made in any other form than that of condemnation; and we would pass from the individual to the general question of sanitary measures in connexion with our armies and fleets. We would say that this much has been gained from the Commission, namely, an acknowledgment by the executive of the value of hygiene, and of the necessity hereafter of attempting not only the cure, but also the prevention of disease. This, however, is not to be attempted to be effected through the agency of an extemporized civil sanitary commission, formed of men who never saw a tent, or a soldier on service, before, but by the allocation of sufficient powers to those who are the "properly constituted authorities,"—the officers of the Medical Department. A British army in the field (at the antipodes or elsewhere) is not in future to be left dependent for its efficiency and health upon the despatch from England of any sanitary commission, with "inspectors of nuisances," from Liverpool, gentlemen who, like Messrs. Freeny and Aynsley, as stated

in the Report[a], soon find that their services are "urgently required in Liverpool," so "give notice of the fact to Dr. Sutherland," "who, in consequence of the notice of leaving the Crimea given by the inspectors, makes application to the Commander of the Forces for two other competent persons to succeed them in their work." What sum these gentlemen received for their services is not stated in the Report, but we hope they were well paid, and we trust that they enjoyed their excursion and were not the worse for their exertions. As Englishmen, however, more deeply interested in the well-being of our army than the welfare of Messrs. Freeny and Co., we sincerely trust that such a farce may never be enacted again; that our army may be at once made efficient in all its parts, and not left in a position to require "Commissioners" to fulfil those duties which are incidental to war, and which the soldier, and not the civilian, is the legitimate party to discharge.

Elements of Pathological Anatomy. By SAMUEL D. GROSS, M. D., Professor of Surgery in the Jefferson Medical College, Philadelphia; and formerly Professor of Pathological Anatomy in the Medical Department of the Cincinnati College. Third Edition. Philadelphia: Blanchard and Lea. 1857. 8vo, pp. 770.

THE study of pathological anatomy, at no very late period so thoroughly disregarded, has, within the last century, engaged the talents and time of many very eminent individuals, who appear to have foreseen intuitively the wonderful influence which an intimate knowledge of its varied details must eventually exercise on disease in general, but more especially on the therapeutic agency that is essential to be employed for the purpose of combating successfully those insidious but progressive ravages that must terminate fatally, unless controlled or checked by such remedial measures as seem to be most properly calculated to arrest their destructive tendency. It is, however, by no means difficult to account for the almost total neglect of this most important branch of medical science, when we are induced calmly to reflect on the numerous impediments that stood in the way of its proper study: the principal of these being the prejudice of mankind, which, for a lengthened period, acted as an insurmountable barrier to every attempt at investigations of this nature, recoiling with, perhaps, a justi-

[a] Pages 144 and 146.

fiable horror from what they, in their unconscious ignorance, conceived to be a violation of the sanctity of the dead, and misunderstanding, or at least affecting to do so, the pure and unselfish motives that could at such a moment prefer a request of this nature; and too often, and without any substantial grounds, was attributed to feelings of heartless and idle curiosity, the yearning anxiety that was displayed for the yet further information that was only to be acquired by an actual cadaveric examination. Every one, at some period of his life, must have witnessed the pious zeal with which the precincts of a country graveyard that contained the remains of some much-loved relative has been watched by the survivors, to guard the inanimate form from the desecrating touch of a sacrilegious hand,—this vigilance being considered absolutely necessary from the fact of its having become bruited abroad, that a mind more inquisitive than ordinary, under circumstances of this nature, had, perhaps, hinted a desire to make himself acquainted with the cause, more than usually complicated or obscure, that had produced a result so totally unexpected. This wish for an autopsy, whether simply implied, or openly expressed, had been indignantly refused; and hence the necessity of those nightly vigils to deter the disciple of progressive science from attempting by undue means to render himself cognisant of that secret, which had thus become impenetrably shrouded beneath the cold earth. For ages popular prejudices, and grosser ignorance, have formed a persistent stumbling-block in the path of those whose mission would seem to be the dissipation of error, and the propagation of opinions which could at least be defended on tenable grounds; and the history of surgery and medicine forms by no means the solitary example of what may be effected by their baneful influence, as far as positive retardation or actual obstruction is concerned. To destroy, or even partially eradicate, existing fallacies, that have acquired a continuous strength by an uncontradicted growth of centuries,—to induce the great mass of mankind to divest their minds of views, however narrow and illiberal they may be shown to be,—to impugn long received doctrines which have acquired a species of sanctity from antiquity, and a certain amount of foundation from having existed so long unquestioned,—is an arduous task indeed, but yet one that the impassioned votary of science must expect to encounter at every step, and as surely to overcome gradually, by a proper display of patient labour and perseverance; but difficult, beyond expression, is the attempt to strip the human mind of those emotions of superstitious awe, which are so natural to arise at the mere proposal of submitting to the hand of

a stranger, for the purposes of scientific investigation, all that remains of some beloved relative or friend, to whom we were bound during life by the closest ties of personal attachment. The philosopher, alive only to the result that is to be obtained, may be inclined to sneer at this natural repugnance, and term it weakness,—such it certainly may be in a modified sense, but still it is a failing in our nature, which we would be sorry to see altogether obliterated.

It has, however, fallen to our lot to witness a more enlightened system of education, which has, in a very great degree, succeeded, if not in completely expunging, at least in materially smoothing away, many of those obstacles that once so seriously affected our advance in the knowledge of particular diseases. Moreover, interested considerations have more or less weight, for the head of a large family, who has observed one or two of its juvenile members suddenly prostrated by an affection identically similar in its nature, will rarely refuse a post-mortem examination, if the request is delicately made, and preferred by an individual whose motives are above every taint of suspicion. The peculiarities of the case should, however, be always such as apparently to justify his desire, for it cannot be too strictly borne in mind, that nothing can be positively more unnatural and revolting, than that morbid yearning after cadaveric investigation, which, utterly regardless of the feelings of others, is anxious only to gratify his own pride and self-love, by publicly demonstrating, no matter how patent the fact may be, the accuracy of the diagnosis which he had formed during life. Such conduct as this cannot be too severely reprehended, as not only tending to entail an additional amount of misery on parties connected with the deceased, but as acting positively injuriously in another point of view,—as we ourselves are cognisant of more than one instance where permission to hold an examination was steadfastly declined, owing to the circumstances just detailed.

While, however, freely conceding, that the revolution that has taken place in those too long cherished sentiments of mankind has opened, in a great measure, a splendid field for pathological inquiry; and while, also, as readily admitting that our numerous hospitals and infirmaries present an almost inexhaustible mine for the same purpose,—truth compels us to be equally candid in stating, that with all those unquestionable facilities so invitingly available, an utter neglect, or with some few and ill-directed exceptions to render that neglect still more glaringly striking, has hitherto been suffered to exist in this particular branch of medical literature, in this country at least.

Now, at the first casual glance, it would appear that this anomalous condition of things could only be accounted for on the following simple grounds,—either that the individuals appointed to those institutions are perfectly incompetent to discharge the duties which they had undertaken to perform, or were too indolent to expend the amount of labour essential for their proper fulfilment. A little reflection will, however, immediately convince us, that neither of these two reasons will offer the true solution of the difficulty, as the one is most clearly and unequivocally disproved by the high positions which the majority of them have succeeded in most justly obtaining in public estimation; while the other is as distinctly shown to be without foundation, by that untiring and unremitting display of physical exertion that is daily and hourly brought under our observation, in the general competition for private practice. What, then, may be the true explanation of the case? Simply this, that all our public medical officers are completely overworked, and, while clinging with a puerile pertinacity to their several appointments, finding it impossible to attend properly to their public and private duties at the same time, they very naturally slur over the former, not as being less important, or of inferior utility, but really because they are of less advantage to themselves individually, in an emolumental point of view, than the latter. Throwing aside altogether those charges of nepotism and undue favouritism which must occasionally occur in all phases of life, as the world is at present constituted, we are unshaken in our opinion, that fifty-five years of age should be the extreme limit at which a man should be allowed to hold one of those appointments, as, after that period—not that we exactly succumb to the opinions of Dr. Johnson, who states "that mercenary considerations then begin to preponderate over and extinguish the purer aspirations of ambition," —we will go so far as to assert, that with the failing energies of manhood, with the anxieties attendant on an extensive practice, and with the natural solicitude to secure a future provision for perhaps a numerous family, we must, of course, expect to find a corresponding diminution in that zeal and enthusiasm which once experienced the noblest of all pleasures from the self-imposed task of labouring to advance the scientific portion of that profession to which he was so ardently attached in youth. It would be a task of more than ordinary difficulty to endeavour to suggest even a partial remedy for this unfortunate state of affairs, for, whether rightly or wrongly, the notion appears to be very generally prevalent, that to surrender voluntarily one of those public positions is tacitly to acknowledge a

sense of declining ability, either bodily or mental; and under the influence of this unfounded idea the evil day will be procrastinated, to terminate ultimately in one of two ways,—either in his totally absenting himself from the institution to which he is attached,—the wisest course to be pursued, by-the-by, under all the circumstances,—or in presenting himself, on very special occasions, on his former theatre of action, to quaver, like a second Braham, his last note, to gull the thoughtless and unreflecting, but to the scarcely concealed chagrin and dismay of his real friends, who are compelled to be the unwilling witnesses of a weakness that can thus induce him to jeopardize the high character he had so deservedly attained, when manhood was in its prime, and the hand obeyed with undeviating precision the volitional impulse of the master mind.

Waiving, therefore, any further allusion to those institutions, jealously guarded as they are at present from all extrinsic intrusion, no matter how strong the claims may be in favour of a breach of those preposterous rules by which they have been hitherto regulated,—let us, for a moment, direct our attention to the manner in which those matters are conducted under the auspices of Government management, when an opportunity presents itself for prosecuting inquiries of this nature. The Crimean campaign, with its overwhelming host of disasters, is still fresh in the memory of every one. Our troops—incessantly exposed to the awful vicissitudes of that terrible climate, with insufficient clothing, and suffering from a deficiency of the commonest necessaries of life, with little food, which was, generally speaking, of bad quality, and improperly prepared; with their energies completely overtasked, and their physical powers exhausted by continual watching, and the harassing assaults of an enemy that was ever on the alert—succumbed at last to the trials to which they were subjected, and a slow and insidious form of disease broke out amongst them, a result that was naturally to be expected, the only marvel being that they had withstood the formidable affection so long. That there were those on the spot fully adequate to the task of observing, and describing with the most perfect accuracy the several phenomena and symptoms as they successively made their appearance, has been now fully confirmed by what has, at various times, appeared in the pages of the Medical Times and Gazette; and yet, strange to say, all and every one of those men so opportunely present were recklessly and insultingly passed by; and, at an enormous expenditure to the nation, a Pathological Commission was actually instituted and really sent out, to arrive just at the moment when their services were com-

paratively worthless; for the disease which had, up to this time, been ruthlessly decimating the ranks of our troops, had abated in its virulence so much so, that, if general rumour may be credited, the laboured Report of this celebrated Pathological Visitation, strictly speaking, does not touch at all upon that particular affection which it was specially appointed to inquire into. Still it must be a source of the most unalloyed satisfaction to consider that, in return for that costly outlay so lavishly incurred, we enjoyed at least the satisfaction of receiving within the precincts of our military store-rooms some hogsheads of morbid human remains, so exquisitely sodden in spirit that it would perplex the acumen of the chief pathologist himself to distinguish a single one of them without the aid of the mysterious label and its carefully inscribed explanatory hieroglyphics. And this, according to the decision of the learned in such matters, we are compelled to pronounce the very essence of the manner in which a pathological inquisition should be conducted.

In alluding to a circumstance so notorious to every one, we sincerely trust that our remarks will be taken in the spirit in which they are intended; for it is far indeed from our purpose to desire to insinuate even the shadow of a doubt on the acknowledged and perfect competency of the gentlemen constituting the Commission to execute to its fullest extent the proposed object, did the opportunity of doing so fairly present itself. With some of them we can boast the pleasure of a personal acquaintance; and can only sincerely express our regret that from the extent of their acquirements a more proper field was unfortunately wanting for their complete and favourable exhibition. It will be seen at once that the foregoing has simply been cited to show that the conduct of our truly wise Government in its *effete* senility forms an admirable counterpart to the system acted on in the majority of our metropolitan hospitals, both with the amplest opportunities, absolutely inviting inquiry, yet both equally neglecting them or throwing them aside; the one actuated by the very spirit of ignorance on those subjects; the other influenced by motives widely different, but productive of precisely similar results.

It is really astonishing to find the lamentable amount of ignorance that so generally prevails, as to what ought to be the characteristic traits and several duties of the individual who aspires to fill the position of a pathologist with credit to himself and a proportionate degree of benefit to society at large. The numerous pretenders to the most useful art have, by the methods which they have pursued, succeeded in in-

vesting it with a species of disrepute, which it must take years of an opposite conduct to eradicate; and even under the most favourable circumstances we greatly fear if any length of time will ever thoroughly disassociate the objects of the really scientific inquirer from those of his grosser rival, gloating over his detestable trade, the rough hewer and coarser mutilator of the inanimate human form. The finished pathologist ought to possess a most accurate knowledge of the appearance presented by each and all of the several textures of the body in a healthy state, being studious to avoid confounding with an abnormal condition any slight deviation from the general standard, unless that variation is clearly traceable to the disease under immediate consideration. His knowledge of anatomy should be most intimate, and his skill in the manipulation of the knife such as to preserve, in as natural a state as possible, the various parts desirable to be preserved for a nicer and more minute examination. To meet the exigencies of the present day, a proficiency in the powers of the microscope is of paramount importance, whilst a certain familiarity with organic chemistry must be considered equally essential. If we add to this a thorough and complete acquaintance with all the great leading elements of medicine and surgery, we shall possess, with some limitations, a species of foundation on which the science of pathology may be safely conducted. Still, however, this will be by no means sufficient, for there must yet be taken into account the mind—the grand storehouse capable of receiving the whole or an abstract part; quick in the gift of analysis; equally prompt in the power of combination, or, as the occasion may require, prepared to brood for hours over a diffiulty, till its solution, like a meteor, will flash vividly across the brain, converting what a moment before appeared to be enshrouded in impenetrable obscurity into all that can be considered clear and intelligible. Moreover, the pathologist should be the closest of all observers, minutely watching each symptom as it arises, a careful note-taker, and trusting as little as possible to the unaided efforts of memory; in short, he should be prepared at all times to avail himself of every opportunity to record the symptoms of that disease, the true nature of which will only be fully revealed on the expected cadaveric examination; for herein alone consists the undoubted excellence of pathology, that it teaches us from the experience of the past what may be really useful and advantageous when emergencies of a similar nature will suddenly start up and embarrass our path in the course of our professional career.

Not upon all, however, has Providence bestowed that com-

bination of attributes calculated to constitute the character we are so anxious to depict; and strong doubts may be reasonably entertained whether the best defined course of study, with the severest mental toil, can ever succeed in moulding an individual naturally deficient in the more essential of those qualifications, into even a respectable resemblance of the real picture. An innate principle can never be effectually imitated by art; and such being the case, the public voice of the profession should be loudly raised against that arrogant class of shallow pretenders who, hot from the very leading-strings of elementary education, and enjoying, perhaps, but a questionable title to the position which they occupy themselves, profess to become the instructors of others in certain arduous and abstruse sciences, of which, at the best, their own conception is most shadowy and imperfect in its nature. They should be taught, in a language too clear and distinct to be misunderstood, that the limited amount of their own acquirements must not be regarded as a fair and impartial gauge by which to measure and estimate the extent of the information of others; and that, however high an arrogant spirit of presumption may elevate them in their own judgment, they must most assuredly sink to their proper level in the eyes of a discerning age, too far advanced in the great principles of real knowledge to tolerate with impunity such contemptible exhibitions of puerile vanity.

The Treatise on Pathological Anatomy at present before us, the work of Dr. Gross of Philadelphia, ought, if anything could, to read a salutary lesson to those embarking in the same pursuit, with talents immeasurably inferior, and with powers of induction that can bear no rational comparison with those that we will find scattered in almost every page of the work under consideration. With a laudable modesty, however, that has a powerful tendency to impress us with an involuntary prejudice in its favour, the author has conferred upon it the unassuming title of "Elementary," though we are fully convinced that we are amply borne out in the justice of our assertion when we state, that no candid or impartial mind can arise from its perusal without conscientiously feeling that a designation of graver import might have been fairly bestowed upon it without in the slightest degree overstepping the limits of a wholesome moderation. Experience has fully established one fact, that the popular voice, if only left to itself, without any undue dictation being called into play, will very rarely, indeed, form an erroneous estimate of the intrinsic merits of a publication that has been submitted to its judgment; and when, therefore, a glance at the title-page announces the in-

contestible fact that a third edition of the volume before us has already been demanded, it speaks more plainly and strongly in favour of its actual value than any specious arguments that we could by any possibility adduce in support of the same fact.

The primary chapters of the work have been devoted by the author to the consideration of the process of inflammation, with the several modes in which it may terminate; taking up and examining, in the most clear and systematic order, all of its results as they successively arise, and explaining each, as it appears to require it, by illustrations, either original or borrowed from sources on which the most implicit reliance may be placed. It would, however, answer no useful or practical purpose to investigate this subject too closely, as all that can possibly be said or written about it has already repeatedly appeared in various other publications, professedly with the same object. To produce a careful digest of all the several phenomena that have hitherto been detailed by different observers, and to endeavour to reconcile any glaring discrepancy that may seem to exist between them, is all that a writer in the present day can be expected to do, and the only merit which he ought to lay claim to is that of aiming to award the strictest and most impartial justice to the claims and labours of every inquirer. This latter task Dr. Gross has certainly performed in the most unexceptable manner, candidly recording each theory as it appears worthy of notice, but, at the same time, permitting to himself the freest latitude to assent to, or dispute, the premises thus laid down. Take, for example, the mode in which he quietly disposes of the untenable doctrine of fevers:—

"If we regard the four phenomena—discoloration, heat, pain, and swelling—referred to above, as being essential to the process, it will be at once perceived that there can be but few inflammations; and we shall therefore be obliged, in describing diseases, to invoke other names, such as irritation and fever, a blind adherence to which has unfortunately tended too much to retard the progress of pathological science. Boerhave enumerated one hundred and fifty varieties of fever; had he enumerated one thousand more, he would have been much nearer to the truth, for he might then have specified nearly every form of inflammation, whether occurring in the external parts of the body or in the interior organs. The word 'fever' is a conventional one, and is employed to designate, not the nature or seat of a disease, but simply the phenomena which it manifests. So also with the term irritation. Mr. Travers and others have written extensive treatises on this subject, but have they pointed out anything concerning the essential character of this disease? Have they told us anything of the peculiar condition of the

nerves and vascular systems which accompanies it? So far as I am acquainted with their labours, they have not; and yet men continue to talk about irritation, with its numerous varieties, as if they had the most perfect knowledge of its nature, seat, causes, and symptoms. A course such as this cannot but have a most dangerous tendency in practice; for what one physician describes as a fever, another will consider simply as an irritation, a third as an inflammation, and in this way no principles can ever be introduced as standards of treatment. The practice of medicine must continue to ebb and to flow with every tide of professional opinion.

"The time, however, cannot be far off when the term fever must be entirely discarded from our books, and diseases named according to the tissues they implicate; then, and not till then, can it be expected that the laws of deranged action will be properly interpreted or fully comprehended. All diseases, I feel confident, will ultimately be found to have a local origin and habitation; and if this opinion shall ever be proved to be true, the whole class of febrile maladies, with its hundred varieties and subdivisions, will cease to have a place in our medical treatises. The artificial nosology of Sauvages, of Hoffman, Cullen, Hosack, and a host of minor worthies, has had its day; its authority is at an end; its sceptre is departed; philosophy has usurped its place, and derides its aid. For the great changes that have been effected, and which are still going forward in relation to the doctrine of morbid action, we are mainly indebted to a profound cultivation of pathological anatomy, which, since the time of Bichat, a period of less than sixty years, has advanced with such rapid strides, and reduced the healing art to a degree of certainty, which could scarcely have been anticipated."

A little farther on we find him questioning the generally admitted fact of the existence of independent muscular action in the capillaries, without, however, disputing their liability to occasional expansion and diminution under peculiar conditions, but ascribing this change in their capacity to causes quite different to those usually assigned for its production. After having in a page or two previously described, what obviously appears to be the characters of the walls of those vessels, he thus proceeds to explain the inferences which he has drawn, and the conclusions which he has arrived at, under all the circumstances of the case:—

"The very first step in the process of inflammation is an altered sensibility of the part, produced by some hurtful agent, which the system makes an effort to dislodge. To effect this, the local impression is reflected upon the cerebro-spinal axis, and through this again upon the heart, which, being sympathetically incited to increased action, sends more blood to the part concerned than it is accustomed to receive, at the same time that the capillaries are perceptibly di-

lated. Those who maintain that the capillaries possess an inherent contractility, by virtue of which they aid in the circulation, may probably be disposed to deny the agency of the heart in bringing about this preternatural determination of blood; but if they will only study carefully the subject, they will, I am sure, arrive at a different conclusion. That these vessels do contract and dilate, no one will dispute, for experiment has fully decided this point: all that I contend for is, that the capillaries have no vermicular movement, and that they are, therefore, incapable of carrying on the circulation without the direct influence of the heart. In this inceptive stage of inflammation this sympathetic action of the heart is, no doubt, so slight as frequently to escape the attention of the observer; but as the disease progresses, it assumes a more distinct character, and can always be easily recognised."

There can be no doubt that the opinions here laid down would seem to be extremely rational, and equally as entitled to a just consideration as any of those inferential hypotheses solely derived from the acknowledged muscularity of the capillary walls, but still, unfortunately for the stability of the theory, however ingenious it may be allowed to be, in the first volume of Hassall's "Microscopic Anatomy, at p. 72, may be found the following details of an observation scarcely calculated to confirm the exact justice of the views as above recorded:—

"I come now to record an observation, which, as far as I am informed, is without parallel. On one occasion, when examining the tongue of a frog, a portion of it broke away from the remainder; this I placed between two plates of glass, and submitted to examination, when, extraordinary to say, it was perceived that the circulation was still vigorously maintained in the majority of the vessels. Anxious to know how long this circulation would be continued, but fully expecting to see it cease every moment, myself and a friend, John Coppin, Esq., of Lincoln's Inn, watched it for upwards of an hour, at the end of which time the blood still flowed onwards in many of the vessels, with scarcely abated vigour, though in others, often the larger ones, the motion had altogether ceased. The mutilated portion of the tongue was then placed in water, in which it remained during the whole of the night; the next morning it was again examined, when it was found that a tolerably active circulation still existed in several of the smaller vessels. After this observation the further examination of the fragment was abandoned. The almost immediate cessation of the circulation, which occurred in some of the larger vessels, admits of explanation in the following way:—In some vessels the blood globules were seen escaping from their open extremities; this effusion of the globules frequently continued for two or three minutes, until the entire contents of such vessels became poured out, when, of course, the circulation within them

ceased, the circulating fluid being expended ; in other capillaries the current was seen to stop long before their contents had been exhausted, in which case it was usually to be remarked that some of the blood corpuscles contained in the vessels had collected around their orifices, thus producing an impediment to the further maintenance of the current.

" The foregoing observation is one of much interest and importance; for it seems to prove that the capillary circulation is, in a great measure, independent of vital influences, and that its persistence is mainly due to physical agencies."

In undertaking the review of a work of this nature, we are invariably enabled to shift our ground with the greatest rapidity from one subject to another, and this can easily be done without the slightest confusion, a circumstance always to be most carefully guarded against in noticing those publications which are particularly devoted to specialties. Thus, for instance, we may pass on at once to that section confined to the consideration of tubercular deposit, a lesion of very general interest to the profession at large, and one that has hitherto baffled the efforts of the highest talent and most varied attainments, in the futile attempt to throw even a ray of light on the real cause of its production, or, when once fairly established, on the means by which it may be even partially encountered, not to say totally eradicated from the system. All that has hitherto been written on the subject leaves us still totally in the dark as to their actual character, and we can pronounce with no certainty whether they are new formations or structures always congenitally existing, but in a form too minute to be detected by the nicest observation ; whether they are all originally of a different nature, or whether they are all one and the same, but seen at different stages of development ; whether they are organized or unorganized ; whether softening commences at the centre or circumference ; and, what is still more important, whether the disease can ever be rendered amenable to a process of treatment terminating in a radical cure, or must it be placed in the same category with cancer and its cognate affections, obstinate against every remedy which art, assisted by nature, can fairly hope to devise ? It is strange, how member after member of a numerous family will be rapidly struck down, and yet the survivors, although too painfully aware that they have themselves become the victims of many of the premonitory symptoms so anxiously watched in others, will yet, with a delusion scarcely credible, cling fondly to hope, nor cease to express the fullest reliance on the skill and ability of their medical attendant to rescue them from the unrelenting

grasp of their insidious foe, till their cherished dream of hope lapses gradually into the still and unconscious dream of eternity. Take up the works of Louis, Andral, Laennec, Elliotson, Watson, with a host of others, and examine them on this subject, and what will we find? A mass of verbiage, but with nothing definite to act upon. And if, then, Dr. Gross lays down a principle which he conscientiously and from experience believes to be correct, however opposed it may be to the opinions entertained by those high authorities, it should be received with every degree of respect and consideration, as at least affording a feasible mode of arresting the disease in the commencement, by a cautious employment of antiphlogistic measures,—a means, we must be candid in stating, too much neglected in the present day.

"In former editions of this work I expressed the opinion that tubercles are always of inflammatory origin, specific in its character; and a more thorough examination of the subject since has only tended to confirm this conclusion. The concomitant action is usually very languid, or so mild and imperceptible, that extensive mischief is often done before the patient is aware of it. In this respect the development of tubercles resembles that of a strumous abscess, which is rarely characterized by any of the ordinary phenomena of phlegmasia.

"The doctrine of the inflammatory origin of this disease is countenanced, if not actually established, by the following circumstances:—

"First, by chemical analysis. Experiments show them to afford albumen, gelatin, and fibrin,—substances which, whether they occur alone, or in combination with each other, are always to be regarded, when found upon the surfaces or the interstices of the organs, as the result of inflammatory irritation.

"Secondly, tubercular matter bears a very great resemblance to spoiled, degraded, or cacoplastic lymph, which is an acknowledged product of inflammation.

"Thirdly, the deposit is often excited by cold, especially when conjoined with moisture, and by unwholesome, indigestible, or unnutritious food. Dyspepsia frequently leads to the same result. By the former are produced internal congestions; by the latter a poor and impoverished state of the blood, so favourable to the development of tubercle.

"Fourthly, in many cases the disease is attended or preceded by hyperæmia, or active congestion. This often happens in the lungs, the pleura, peritoneum, and lymphatic ganglions.

"Fifthly, the doctrine of the inflammatory origin of this deposition derives great plausibility from what occurs in the inferior animals from mechanical irritation. In the experiments of Cruveilhier, Kay, and Saunders, well-characterized tubercles were produced

in a very short time simply by dropping mercury into the trachea. Similar effects are frequently witnessed in miners, needle-grinders, and weavers, who habitually inhale gritty or irritating matter. Persons of this description are peculiarly prone to phthisis.

"Sixthly, there is no appreciable deposit or effusion in any of the shut sacs, cells, or cavities of the body, which is not, strictly speaking, the result of inflammatory action, though this may be too slight to attract attention, or to be attended by the ordinary phenomena of that process."

In the second part of his work, termed by the author "Special Pathological Anatomy," there is not a single organ or tissue of the entire human body that he has not submitted to the most complete and searching examination, and the appearance produced by every form of disease upon each has been most scrupulously noted and accurately described. From the mass of facts thus literally aggregated together, all of them having been apparently very carefully reconsidered and remodelled before a publication has been hazarded, it becomes, indeed, a task of no ordinary difficulty to select any single part which could be subjected to an analytical review with any prospect of interest or ultimate advantage to the general reader. By the very course he has pursued, the author has, in our opinion, adopted the wisest of all modes to disarm invidious criticism; for, while we may look in vain for those dogmatic assertions, unsupported by any positive proof, which disfigure the great majority of our modern publications, we will find, instead of them, a modest candour unhesitatingly laying down the opinions of others, yet at the same time exercising the undoubted privilege of occasionally dissenting from them, and advocating those entertained by himself, whenever they seem to be justified by the circumstances of the case. We must, therefore, be satisfied with giving an extract or two at random from this section of the volume, more for the purpose of exhibiting the purity of diction and simplicity of style of our Transatlantic brethren than with the intention of closely criticising the sentiments which it would appear to be their object to impress. We quote, for example, his remarks on cerebral softening:—

"Softening of the brain is exceedingly frequent, both as an acute and as a chronic disease. It is by far most common in old subjects, but no age is exempt from it, not even early infancy. The parts of the brain which, according to my own experience, are most liable to it, aresuch as are most obnoxious to sanguineous effusions, as the fornix, interventricular septum, great commissure, optic couches, and striated bodies; the frequency with which they are affected being in

the order here enumerated. In the majority of cases I have found the figurate bodies alone implicated, the convolutions and other structures retaining their normal characters. Both cerebral substances are almost always simultaneously softened, though the white is often affected in a much greater degree than the cineritious.

The extent of the lesion varies in different cases. Occasionally large masses are involved, as one-third, one-half, or nearly the whole of one hemisphere; more generally, however, the lesion occurs in circumscribed spots, varying from several lines to one or two inches, and leaving the rest of the organ of its natural colour and consistence. Sometimes the softening occupies a space not larger than a cherry, a pea, or millet-seed, while in others it is spread over almost the entire surface of both hemispheres and that of the ventricles. A remarkable example of softening of the brain came under my notice in 1836, in a man forty-five years old. In this case, examined twenty-four hours after death, both the white and gray substance had lost much of their natural firmness and cohesion. The whole of the fornix, excepting its anterior pillars, the interventricular septum, part of the great commissure, and the pineal gland, were completely dissolved. The striated bodies, optic couches, and quadrigeminal tubercles, were likewise much softened, and so tender was the base of the brain, that the medulla oblongata, cerebral crura, and roots of the nerves, were all left behind in the attempt to remove the organ from the skull. In the cerebellum the parts which were more particularly diseased were the cerebello-testicular processes, the Vieussinian valve, and the gray substance on the under substance of each lobe. The vessels of the pia mater were excessively gorged with blood, and the fibrous texture of the hemispheres, especially of the right, exhibited a considerable number of small rose-coloured patches, dappled with black points corresponding with the orifices of divided capillaries. No lesion, as far as could be discerned, existed in any other organ.

"The appearance and consistence of the part affected vary according to the duration of the disease and the intensity of the exciting cause. In the early stages the changes are always very slight, and can only be recognised by the touch. At a more advanced period the continuity of the organic particles is sensibly disturbed, and the nervous substance is so soft, that it may be readily broken down with the finger into a thin, pap-like mass. It is no longer able to sustain the slightest weight, and frequently has no more consistence than so much cream or thickened milk; it may be easily scraped with the knife, but to cut it smoothly is impossible. Having attained this degree of softening, the cerebral tissue soon falls to pieces, forming thus a breach of continuity, occasionally of very considerable extent. If examined with the microscope, the small vessels appear coated with granular matter; and in the softer portions of the mass numerous granules and exudation corpuscles are seen mixed with a portion of nerve-tubes; an odour, like sulphu-

retted hydrogen, sometimes exhales from the disorganized mass, but this is rare.

"Although the softened parts are occasionally separated from the sound by a distinct line of demarcation, yet more commonly they run insensibly into each other; the colour varies according to the time that has elapsed since the invasion. In the early stage, when there is usually a considerable degree of inflammatory turgescence, it is often of a uniform rose-tint, studded with dots, or marked with purple arborescent lines; more rarely we find small hemorrhagic effusions, and patches of a dark leaden hue, produced, doubtless, by intense capillary injection. At a later period of the disorganization, the part is usually of an opaque-white, brownish, yellowish, or greenish colour; or these tints are blended, different shades of them occurring at different points, or even at the same place. The dull milky hue, which is so frequently observed in this affection, is supposed by Lallemand to be caused by an infiltration of pus, an opinion which is evidently unfounded, as in the vast majority of cases no such fluid whatever is to be seen. In this condition, which is often found after hydrocephalus, the cerebral mass seems to be perfectly anæmic, not a drop of blood coming from the affected part when cut. In some instances the colour remains. When this happens, which, however, is rather rare, the softening is usually confined to the fibrous structure, and may readily escape notice. In this affection the pia mater is sometimes seriously implicated. When the softening is seated on the convoluted surface of the cerebrum or cerebellum, or on the surface of the striated bodies and optic couches, the membrane is generally preternaturally red and tough, and on attempting to raise it, the disorganized gray substance often separates along with it. In other cases I have found portions of the pia mater completely destroyed or converted into a dirty brownish pulp, devoid of every feature of the original texture. These changes are particularly liable to happen when the softening affects the surface of the figurate bodies in the floor of the lateral ventricles. In these cases the arachnoid frequently experiences the same fate," &c. &c.

With this extract, which presents a very fair average specimen of the character of the latter part of the work, we must conclude our notice of the present volume; and in doing so we most sincerely congratulate the author on the successful manner in which he has accomplished his proposed object. His book is most admirably calculated to fill up a blank which has long been felt to exist in this department of medical literature, and as such must become very widely circulated amongst all classes of the profession.

Fiske Fund Prize Essays.

The Effects of Climate on Tuberculous Disease. By Edwin Lee, M. R. C. S. London. Philadelphia: Blanchard and Lea. 1857. 8vo, pp. 73.

The Influence of Pregnancy on the Development of Tubercles. By Edward Warren, M. D., of Edenton, N. C. Philadelphia: Blanchard and Lea. 1857. 8vo, pp. 42.

"Dr. Caleb Fiske, who was President of the Rhode Island Medical Society in 1823 and 1824, at his death bequeathed to that Society a fund of 2000 dollars, directing the annual income to be expended in premiums for essays on subjects selected for competition. The first premium of 40 dollars was awarded 27th June, 1836; since which time a large number of valuable dissertations have been laid before the profession through the instrumentality of Dr. Fiske's well-directed munificence. By the judicious management of the trustees the fund has gradually increased, and they are now able to offer two annual prizes, of 100 dollars each.

"The essays in the present volume are those to which the prizes of 1855 and 1856 were awarded. Connected by the topics discussed, and presenting a large amount of important information on one of the most interesting and difficult subjects of medical science, the trustees have been desirous of presenting them in a more permanent form, and they have accordingly been reprinted in their present shape from the American Journal of the Medical Sciences, for April and July, 1857, in which they originally appeared."

The author of the first of these essays opens the subject with some general preliminary observations, in the course of which he takes a brief survey of the opinions which have been expressed by various writers respecting the nature of tubercular disease, and of the causes most frequently tending to its development. The question as to the curability of consumption is settled at once in the affirmative—"the fact having been verified in numerous instances of persons, who, after having presented all the general and local indications of its existence in various stages of structural lesion, have recovered—living in the enjoyment of tolerable health until a more or less advanced age, when on their succumbing under some other disease, the examination, p. m., has revealed the traces of the former malady."

We are disposed to demur to some of the propositions presented to us in the following remarks:—

"In Great Britain more especially, as also in the United States, practitioners, unlike those of most European countries, are accustomed to trust almost exclusively to pharmaceutical agents in the

treatment of chronic diseases, but seldom endeavouring to rectify the abnormal conditions of the system, upon which depend morbid local manifestations, by the employment of hygienic and medical means, which, by effecting favourable modifications in the constitution of patients, tend to procure permanent cures instead of a temporary alleviation of suffering, or a transient amelioration of their state. 'To occupy one's self in treating merely the manifestations of a diathesis,' says a distinguished French physician, 'is generally as if one were to run after the shadow, and leave the substance which it is desirable to obtain.' And the adoption of this mode of treatment in a disease which, like consumption, so directly compromises the lives of the persons affected, is attended with the most pernicious consequences, because the precious time is lost, during which there would be the greatest probability of succeeding, by the employment of climate and other suitable measures, until the disease has arrived at a stage when the use of all remedial means would fail to arrest its progress. A serious obstacle, however, presents itself to the favourable termination of the disease, in many cases where a cure might be effected, viz., the difficulty which often exists in ascertaining the presence of tuberculous disease at its outset. A minute examination of the physical signs supplied by an abnormal state of the respiratory function would, in many instances, lead to the discovery of tubercles in the lungs before their presence was indicated by clearly marked general symptoms; but the majority of practitioners are scarcely capable of making such an examination as would frequently suffice to detect pulmonary disease in its earliest stage, *especially in England, and probably also in America*, where exploration of the state of the organs contained in the thoracic cavity, by means of auscultation and percussion, *forms no part of the education of medical students* [!]. It consequently follows that the weakness, and various other symptoms experienced by patients in the early stage of pulmonary tuberculization, are *usually regarded* as the indication of no very serious malady, or of a temporary indisposition; which opinion is often confirmed for a period by the amelioration which takes place from time to time in chronic cases, and by the temporary cessation or alleviation of *chest symptoms*, produced under the influence of favourable circumstances, as the summer season; a residence in the country for some weeks or months; or of the remedies which may have been had recourse to. Hence patients, their friends, and frequently the medical practitioner, are *misled* as to the true nature of the disease, until at the expiration of a longer or shorter period, either spontaneously or from the action of some exciting cause, the symptoms reappear with aggravated intensity, and auscultation, practised by *an experienced physician*, renders its existence apparent."

We abstain from commenting upon the views of the essayist as here laid down, and would merely observe that in following him as he continues his argument to the end of this chapter, we

have not succeeded in discovering what are the true diagnostic marks which he would have us to receive as our guide to the successful treatment of tuberculization in its early stage; in fact, the very information which the *majority of* (uneducated) *practitioners* should naturally expect to find laid down in a lucid and masterly way in the present treatise is unaccountably omitted.

The second chapter, which is devoted to an examination of the nature of pulmonary tuberculization, presents a very fair review of the most approved modern opinions on the subject, and, as is usual in essays of this kind, deals largely in quotations.

The causes of pulmonary consumption are treated of in the next chapter, and then we arrive at the more immediate subject of the essay, namely, the effects which climate is calculated to produce upon those predisposed to or labouring under tubercular disease.

The general conclusions at which the author has arrived may be thus indicated:—

Tuberculous disease of the lungs is curable in an indefinite proportion of cases; and this proportion is capable of being increased by the more general and timely employment of climate and other hygienic means, which are at present seldom had recourse to until the disease has advanced too far.

Tuberculization probably depends on impoverishment of the blood, marked by diminished amount of globules, and a change in its general composition; this state is chiefly caused by a deficient *excretory* action of the skin, as well as diminished *respiratory* function of the same organ.

A humid state of the atmosphere, by tending to depress the vital powers, particularly the activity of the capillary circulation, favours the development of phthisis; in like manner act also the various depressing passions.

Tuberculous disease is comparatively rare in cold and dry climates; rare also in warm and dry countries, where open-air life is enjoyed, and the functions of the skin are maintained without much muscular effort. On the other hand, it is frequent in climates which are hot and moist, this state of atmosphere tending to repress the insensible perspiration, and to induce a state of general relaxation and deficient tone.

The chief indications of treatment by means of climate are, first, to obviate, as far as possible, the morbid condition of the blood, and thus to prevent or arrest the formation of the morbid product; and second, to allay the general and local excitation occasioned by the organic lesion.

The first indication is best fulfilled by change of air, and a

residence, more or less prolonged, in warm countries during the winter. The beneficial influence of climate in arresting the process of tuberculization would be the more marked in proportion as the disease is recent.

The best winter residences are those which, together with a suitable climate, possess resources for mental occupation and open-air amusements.

Warm and dry localities are, in general, better suited to those of lymphatic temperament and languid circulation; whereas patients of sanguine or nervous habit, with a brisk circulation and a tendency to hemoptysis, find relief in an atmosphere of moderate degree of moisture.

Among the climates most in repute for their efficacy in retarding the progress of pulmonary consumption, those of Upper Egypt and the S.E. coast of Spain are the most remarkable for their warmth and equability in winter, as well as for the dryness of their atmosphere. To these climates, Hyères, Nice, Menton, Malta, and Naples, approximate nearest as respects dryness, though differing materially in other respects. The West India islands and Cuba may be mentioned as a type of hot and moist climates. Among the intermediate climates characterized by variable degrees of warmth, equability, and humidity, are Madeira, Algiers, Pau, Pisa, Rome. The climate of the three latter is represented as of a sedative character.

Sea voyages are often beneficial in the early stages, when no urgent symptoms are present. The advantages thence derived depend on the tonic effects of a continued renovation of pure air, not on the saline impregnation of the atmosphere.

Consumptive patients, in general, receive more benefit from land-travel through an agreeable country, than from sea voyages.

Appended to the essay are some brief notices of the leading peculiarities by which several places of resort are characterized. This final chapter may be referred to with advantage by those who are desirous to know something of the climate, scenery, and social condition of the following places: Pau, Hyères, Nice, Menton, Pisa, Rome, Naples, Palermo, Malta.

In the second essay, from the pen of Dr. Warren, on the Influence of Pregnancy, we have a clear and concise investigation of the questions, whether and how far the condition of pregnancy exerts a preventive influence on the formation of tubercles in the lungs of those predisposed to this disease, and whether it also exercises a retarding or suspending power in those cases in which the tuberculous diathesis has been already established.

Among the general conditions of the system which precede the development of the phthisical diathesis, the first in importance is a certain impairment of the digestive process, which manifests itself by a faulty transformation of the oleaginous elements into chyle, an insufficient formation of fibrine, &c.; in fact, this impairment of the nutritive function is inseparably connected with tubercular degeneration, and arises from an inadequate supply of nervous force to the several organs connected with the digestive apparatus. This view is strongly corroborated by the well-known sanative efficacy of those remedial agents, whether hygienic or pharmaceutic, which are included in the category of tonics; by these the nervous centres are gently but effectually stimulated, so that an increased amount of nervous force is generated and transmitted to the various organs, and in that way the health and harmony of the entire system is promoted.

The author describes disease, in general, as—

"A manifestation of certain phenomena, which depend upon the existence of some principle, different in its essence and operation from that agency by which the organism is maintained in its normal state. It consists in the presence of a series of effects which are the results of the action of a particular cause. This *cause* operates, and these *effects* are produced, in consequence of some alteration of the natural condition of the system, whereby a state is developed favourable to the action of the one, and the manifestation of the other. Hence, we have three elements essential to disease:—1. An *altered condition*, resulting from the operation of some *general influence* or cause, unlike the normal or *healthy condition*, and favourable to the action of a *particular cause*. 2. A cause, distinct alike in its intrinsic character and in its ultimate effects, and operating in a peculiar manner. 3. Effects, or symptoms, which take their character from the peculiar agent which has called them into existence, and from the manner of its action."

After some general remarks on the nature of the law of antagonism, as enunciated by Hippocrates, in which the author demonstrates its logical truth and practical applicability, he then proceeds to examine into the nature of phthisis and of pregnancy, for the purpose of showing that the latter condition develops in the system a state which is directly antagonistic to that which favours and accelerates the deposition of tubercle. Thus, pregnancy implies the existence of a physiological process, which requires a certain amount of *health;* in which the vital principle attains, as it were, a maximum of development. 2. It is marked by the extraordinary enlargement of the uterus, chiefly of its *muscular* tissue, accompanied by augmentation of

strength, roundness of figure, and appearance of plethora. 3. Although frequently attended with an interruption of the process of digestion, it is not, like phthisis, preceded or accompanied by a positive *impairment* of this process. 4. The state of the blood in pregnancy is essentially different from that of phthisis. 5. In consumption the great burden of combustion and depuration falls upon the lungs; whereas in pregnancy, although the balance is disturbed, the burden falls on the liver (see Rokitansky, Montgomery, Burns, Chailly). 6. The nervous system in pregnancy is in a condition of exaltation, of unusual action; quite opposed to the state of absolute depression or debility by which phthisis is characterized. 7. The effects of tonics, both general and special, in a phthisical state of the system, are in a high degree beneficial, whereas in pregnancy they are not only uncalled for, but positively contra-indicated, as serving to increase the plethoric tendency of the system.

The author is opposed to the belief that the general proportion of females who die of consumption is greater than that of men, and maintains that we have no positive evidence in support of this assumed fact, so strongly insisted on by Louis and Laennec; he says:—

"An examination of statistics proves, that it is not a settled fact that more females are destroyed by this malady, and that there is a positive approximation towards equality in the effects of phthisis upon the two sexes. This 'approximation towards equality' shows the operation of some great equalizing cause, by which a certain amount of protection is secured to the female system, that makes up for its greater original susceptibility, and affects the general result in the manner alluded to above. *Pregnancy* complies with *all* the conditions which this cause demands for its operation, and it is fair to attribute this protecting and equalizing effect to its influence on the female system."

In conclusion, it only remains that we should express the gratification we have felt in the perusal of this compact but clear exposition of a most interesting question.

How to Work the Microscope. A Course of Lectures. By Lionel S. Beale, M.B., F.R.S. London: Churchill, 1857. Fcap. 8vo, pp. 124.

Although, latterly, microscopes have become "plenty as blackberries," and even junior students talk learnedly about "nucleated cells," "tesselated epithelium," and the like, we are far from thinking an additional elementary work a superfluity. Many a one, after making himself master of the mechanism of the microscope, of the optical science involved, and of the interesting results which have followed its use, has been sorely puzzled and discouraged on attempting the investigation for himself. This has often arisen, doubtless, from commencing with the examination of morbid tissues instead of crystalline products or the simpler forms of vegetable life; but to a certain extent every one must have felt the want of a plain and intelligible manual, which should tell him more minutely the best method of proceeding, in the fullest detail. Now this is what Dr. Beale has furnished for our benefit. His former work on the application of the microscope to clinical teaching is most valuable, indeed indispensable, to both students and practitioners; but in the present volume he enters into more minute details, and explains more fully how we are to proceed in our researches. In his own words, which we think he has made good, "my aim will be to describe to you the mode of examining different objects in the microscope, the best methods of displaying their structure, and the manner in which they may be preserved permanently." Few persons who have tried to work on by themselves, and found the numerous little obstacles which start up at every step, will be among those whom Dr. Beale fancies—

"May stigmatize many little points to which I shall have to allude as merely mechanical; others may be regarded as belonging rather to the province of the chemist than to the microscopical observer, and not a few will strike you as unimportant and hardly worthy of attention. I feel strongly how intimately success in microscopical as well as chemical inquiries is connected with a readiness in surmounting comparatively small difficulties, and with the possession of mechanical dexterity. And I should be doing a great injustice to my pupils if I did not bring these processes under their notice, and endeavour to facilitate, as far as possible, the performance of those operations which are essential to the successful demonstration of the management of textures under the microscope. Depend upon it, these are questions not beneath the consideration of any one who takes a real interest in the structure of the different organisms by which he is surrounded; and it is the same in this as in other

branches of inquiry, that he who is most fully conversant with elementary detail will be the most successful in the consideration of the higher and more abstruse problems, while he will feel a real love for his work which is denied to the more superficial inquirer."

The little volume before us consists of eight lectures, delivered by Dr. Beale to his class; the first four lectures are occupied by details concerning microscopes, the instruments required in microscopical research, and the method of making the cells used in preserving objects. These points are so fully treated in other works that we shall not detain the reader about them, merely observing that, whilst all this apparatus, including a first-class microscope with all its appurtenances, is very desirable and advantageous to those who have money to spare, the real work can be done at an incomparably less expense. The admirable researches of Ehrenberg were performed with a microscope very inferior to the ordinary ones in use among students. An educated eye and hand are the most important elements.

The fifth and subsequent lectures are devoted to the consideration of the mode of examining objects, of examining and preserving tissues, of injections, and of the value of chemical reagents in microscopical investigations. Two supplementary sections are added, which the student will find very useful, viz., tables for practising the use of the microscope and manipulation, and a list of the apparatus required in microscopical investigation.

The fifth lecture commences with some general considerations upon the structure of tissues, in which the author points out their composite character, and the difficulty thus occasioned in their demonstration:—

"The vast difference in the properties of the several textures above enumerated renders it absolutely impossible that all can be distinguished in a single specimen; for the circumstances which favour the exhibition of one structure will necessarily render another quite invisible. Hence, before we can hope to demonstrate satisfactorily the anatomical peculiarities of any one of these different textures, we must become acquainted with its general properties, and must consider the mode of examination likely to be most efficient in rendering them distinct." "Now, some observers who have not sufficiently considered the different characters of the elementary structures of which most of the organs of the body are composed, have strongly objected to what they term *methods of preparation*, considering that by these processes structures are even *formed*, which have no real existence in the natural state of the part. In this view there is some reason. Doubtless, from the examination of a dead

tissue, we can form but an imperfect conception of the beauty of its elementary parts, and their wonderful adaptation to the office they are designed to perform in the animal economy; neither can we form an idea of the changes it undergoes during its vital activity; and we must remember that there is no known fluid in which we can immerse a specimen for examination which possesses the precise character of that which bathes the tissue during its lifetime. Serum may, perhaps, be the nearest approach to such a fluid, but there is every reason to believe that this differs from the fluid surrounding the primitive particles almost as much as some artificial media which have been proved by experience to give very satisfactory results. Objectors to the preparation of tissues have not satisfactorily proved that many of the structures that we see after death have a precisely similar appearance during life, and it is more than probable that many of the more delicate tissues have never been seen by any one in the condition in which they exist during life. I believe that the amount of opacity which is absolutely necessary for seeing some of them is quite inconsistent with their vitality, and is the result of a change which has never been fully appreciated, though, perhaps, some idea of its nature may be formed by considering the character of fibrine in living blood, and fibrine removed from the organism and coagulated, or those of albumen dissolved in the serum, coagulated, but transparent in many of the tissues, coagulated and opaque after the addition of different reagents."

Very careful instructions are given as to making these minute dissections, and of the instrumentality required, such as loaded corks, slabs of wax for pinning preparations upon, &c., and directions as to making thin sections, whether dry or moist. This, as all microscopists know, is absolutely necessary to examine objects in various ways and in different media, and to submit portions to the test of chemical reagents.

But after an object has been thoroughly examined, it may be very desirable to preserve it as a permanent record; and this may be done in various modes, either as a dry preparation, or immersed in aqueous fluid, glycerine, oil, turpentine, Canada balsam, &c. For each we are supplied with full instructions. Take an example :—

"Suppose a portion of this muscular fibre is to be examined under the microscope, I remove a small piece with a pair of very fine scissors, and place it carefully upon this glass slide. With the aid of two needles, I tear it into very small shreds, and then moisten it with a little water dropped upon it from the finger, or from a pipette or from the wash-bottle; or I add to it, instead of water, a drop of serum, of syrup, or of glycerine; next a square or circular piece of thin glass held in a pair of fine forceps is gently breathed upon and applied to the surface of the liquid, being brought into contact

with it first on one side, and afterwards allowed to fall down very gradually with the aid of a needle or a piece of fine wire placed underneath one edge, until it is completely wetted. Lastly, any superfluous fluid is to be absorbed by a cloth or a small piece of fine sponge or blotting-paper, and the slide placed in the field of the microscope for examination."

The proper methods for permanently preserving the specimen thus examined are noted, and afterwards for examining and preserving objects in Canada balsam. The mode of separating deposits from fluids is then shown, and next we have some valuable directions for the examination and preparation of the infusoria, diatomacea, &c. In a very short space the student will find ample details for his guidance in most particulars. We shall conclude this imperfect notice of Dr. Beale's excellent little manual by quoting his general considerations with reference to the nature of the medium in which tissues should be examined :—

"If the structure be dry and very thin, or if we require only to make out any general points with reference to its outline, or the character of its surface, it may be examined in air. So also many structures examined by low powers and by reflected light, exhibit their general structure very satisfactorily when mounted perfectly dry. If the structure be delicate and moist, and readily destroyed by careless manipulation, it should be examined in some aqueous fluid when quite fresh. The character of the fluid will vary in different cases. Water answers well in many instances, but the microscopical characters of some textures are completely altered by water, or even altogether destroyed by it. Others are so dark and opaque that they are not well displayed in water. Cellular structures become distended by it. In consequence of containing a denser fluid in their interior, the more limpid water passes through the cell-wall, and mixes with the cell contents. The cell thus becomes distended by this flowing in or endosmosis, and the process may go on to such an extent as to cause the rupture of the cell and the escape of its contents. To prevent this result, it is necessary to immerse the structure in some fluid approaching to that in its interior in density. A little white sugar may be dissolved in the water with this end, or a little glycerine may be added to it for the same purpose. Perhaps, of all the substances soluble in water, glycerine is one of the most useful to the microscopist. With glycerine he may obtain a fluid of any density and of various degrees of refracting power. Moderately strong solutions of glycerine preserve organized structures for any length of time. Glycerine is to moist tissues what Canada balsam is to textures which are capable of being dried, without their structures being impaired. The most dense, opaque, and ill-defined structures, immersed in glycerine, become clear and transparent; and

anatomical peculiarities which were before indistinct or not observable, become demonstrable without difficulty. Another advantage is, that by the addition of a little water, all the original characters of the tissues are restored.

"Canada balsam excites a similar effect upon many textures in rendering them transparent, but it is, of course, only applicable to those structures which are not altered or destroyed by drying, and its use is, therefore, very limited. Glycerine does not possess these disadvantages, and in it any moist tissue may be placed. Glycerine might be termed the Canada balsam of moist tissues."

On the Expediency of instituting an Academy of Medicine in England; illustrated by the prevailing opinions and practice respecting the use of Chloroform in Operations. By JAMES ARNOTT, M.D. London: Churchill. 1857. Pamphlet, pp. 16.

ACCORDING to Dr. Arnott, it would be "expedient" to institute an Academy of Medicine for "putting down" chloroform, and "putting up" congelation. That is the end and aim of the pamphlet, which is very rich in assertions, and deficient in facts. We differ entirely from Dr. Arnott, both as to his means and end. If an Academy of Medicine were instituted to decide upon the value of remedies, it would be an intolerable tyranny if it had legal power to enforce its decrees; and if without legal power, it could only act at all when embodying the general opinion of the profession. A free and abundant medical press is, after all, the best tribunal; any one can communicate his experience, and from this ample store of materials the profession will draw its own conclusions, which will react upon the press. That it may take more time before the full value of an improvement is recognised, we grant; but we think that no evil, and sure we are that success will be ultimately attained. We doubt, and more than doubt, whether any real discovery or invention of value has been actually lost. The illustrations Dr. Arnott has adduced are an argument on the other side. Dr. Bellingham's (alas! that we have to add "the late") cure of aneurism by compression has fairly fought its way through an amount of opposition that, embodied in an Academy, would have smothered it for ever. Dr. Arnott forgets that prejudice may exist in an Academy. As to the value of chloroform, it has been submitted to Dr. Arnott's desiderated test, and the French Academy have admitted its value. We cannot enter into a comparison between it and congelation at present. We

have no desire to undervalue the latter, believing, as we do, that for many operations, especially the minor ones, it may answer as well as, or better than, chloroform. And, for the prevalence of this opinion which we believe to be general, Dr. Arnott is indebted, not to his favourite "Academy of Medicine," but to the influence of a free medical press.

The Science and Art of Surgery. Being a Treatise on Surgical Injuries, Diseases, and Operations. By John Erichsen, Professor of Surgery in University College. Second Edition, enlarged and carefully revised. Illustrated by 400 Engravings on Wood. London: Walton and Maberly, 1857. 8vo, pp. 725.

In our seventeenth volume we reviewed at length the first edition of this complete and excellent treatise on Surgery, which in our schools has confessedly succeeded that of Samuel Cooper. The author, in the second edition, now before us, has spared no trouble in its improvement in every respect. He has not only added the results of his own vast experience, accumulated both in hospital and in private practice, but he has brought it down, under every head, to the present state of surgery. In glancing through its pages we have been much gratified to find that he gives full and due prominence to the additions made within the last few years by the Dublin school, and chiefly through our pages, to the important subjects of the treatment of aneurism by compression, and of the resection of joints. The entire work, complete as the great English Treatise on Surgery of our own time, is, we can assure our readers, equally well adapted for the most junior student and as a book of reference for the advanced practitioner.

PART III.

MEDICAL MISCELLANY.

PROCEEDINGS OF THE DUBLIN OBSTETRICAL SOCIETY.

(*Continued from* vol. xxiii., p. 220.)

SESSION 1856-7.

Second Meeting, January 16, 1857.

Dr. Sawyer detailed the history of a case of vesico-vaginal fistula, together with an account of the operation for its cure, viz., the quill section, as adopted by Mr. M. Colles. The case, which turned out most successfully, has been already published.

Third Meeting, February 25, 1857.

Dr. Hardy detailed the history of several cases in which foreign bodies had been introduced into the various mucous passages of the body. His remarks have been published elsewhere.

Dr. T. Hayden read the following history of a case of *Puerperal Scarlatina.* After remarking upon the fatal nature of puerperal scarlatina, the insidiousness of its approach, and its all but too unconquerable malignancy, he proceeded:—

"Mrs. H., aged about thirty-three years, of sallow complexion and nervous temperament, was delivered of her fourth child (a female), after twelve hours' labour, on Wednesday, March 21, 1855, at 12 o'clock noon. The placenta came away spontaneously about half-an-hour afterwards, and was followed by slight sanguineous oozing, which was easily controlled by a pad and bandage. The patient slept soundly for several hours the two following nights; lochia natural; had an aperient draught of castor-oil and tincture of rhubarb on Friday, 23rd. On Saturday was allowed an egg for breakfast and a chop for dinner, both of which she took with a relish. I found her doing well on Sunday, 25th, and, after directing a simple draught of oil, I was about to retire, when she incidentally called my

attention to a slight efflorescence on the arms, best marked at the flexure of the elbow-joints. This, she informed me, made its appearance on the previous night, *without chill*, or other premonitory or unpleasant sensation, and did not interfere with her rest. On my viewing it with an air of suspicion, she playfully inquired whether 'I thought it was scarlatina,' and suggested the possibility of its being the 'prickly heat,' which is a cutaneous eruption common in Mexico, where she had resided for several years with her husband, and whence she had but lately returned in order to be confined. I learned that whilst there she had repeatedly been the subject of this disease, which is usually unattended with febrile symptoms, and not peculiar to the puerperal state. To this view of the case I demurred, but expressed no positive opinion as to its nature, contenting myself with forbidding all food and drink of a heating or stimulating kind. The pulse was scarcely altered in character, at that period, from the standard of convalescence, and beat only 98 in the minute; the tongue clean and moist; and the throat unaffected. The medicine acted rather severely the following night, but there was scarcely any alteration in the symptoms next day (Monday), save that the eruption was more generally diffused over the arms, and now extended to the neck and chest. A few miliary vesicles appeared above the chin. Pulse same as yesterday; throat slightly red, but no uneasiness in swallowing; complained of slight cough. She gaily observed, that she was about 'importing the prickly heat into this country.' I, however, ventured to pronounce scarlatina, which she heard without evincing any sign of alarm. Ordered a simple expectorant mixture.

"Tuesday, 27th. Was very feverish during the night, and slept little; complained of a feeling of suffocation and violent beating of the heart; pulse 140; eruption now bright red; fauces covered with tenacious mucus; great thirst. Ordered a mild seidlitz powder, and an expectorant mixture, with carbonate of ammonia in three-grain doses; to have grapes, a little iced cream, and tamarind water; arms and face to be sponged with tepid dilute vinegar. I desired a consultation, and saw her again in the evening. The aperient medicine not having acted, a fetid enema was directed, and an expectorant mixture with citrate of ammonia, as the carbonate had produced 'a burning sensation along the throat;' and a blister to be applied to the chest. The eruption appeared to-day, for first time, on the lower extremities, but less vividly than elsewhere.

"Wednesday, 28th, 10 A. M. Case now truly formidable; tongue raspy; speech inarticulate; indistinct vision, and vertigo; pulse 144, and all but imperceptible; extremities cold; abdomen tympanitic; neck and abdomen covered with miliary vesicles, and a putrid odour exhaled from the body. Slightly purged last night: to have claret, brandy, and an opiate enema. I saw the patient again in the evening in consultation; symptoms unaltered, save as to intensity; patient now scarcely sensible to external impressions; to have wine and brandy repeatedly, as the power of deglutition was but little

impaired. 5 P. M. Eyes filmy, with accumulations of mucus in the angles and on the edges of the lids; deglutition now performed with difficulty. 10 P. M. Pulse scarcely to be felt; perspiration alternately hot and cold. She died at 5 A. M. on Thursday, 29th. The most notable features in the history of this painful case are, I think, the obscurity attending the means by which the disease was communicated to the patient, and the total absence of febrile excitement previous to, and for some days after, the appearance of the eruption. With reference to the first point, the only explanation I can offer is the following. It appeared that the patient had been visited on the first or second day after delivery by a female friend whose children had had scarlatina about three months previously; whether this visit was the medium of infection I am not prepared positively to say; but as it was the only one which I could glean, after a searching inquiry, I feel disposed to regard it in that light. The second feature in the case, to which I have directed the attention of the Society, furnishes matter for profitable reflection. The morbific poison would appear to have pervaded the system, developed itself therein, and appeared upon the surface in its characteristic form, without producing an appreciable amount of constitutional disturbance. This is scarcely reconcilable with the ferment-theory of eruptive fevers. I am inclined to think that, in addition to the usual examination into the state of the tongue, pulse, and abdomen, and the other routine inquiries, instituted at the bedside during the two or three days immediately succeeding that of delivery, it would be well, at least where scarlatina was prevalent, to examine the cutaneous surface, and the most convenient point that could be selected for this purpose is the flexure of the elbow-joints. It is not necessary to fix attention upon the fatal tendency of puerperal scarlatina as exemplified in the foregoing case, nor upon the utter inefficacy of all known medicinal means to arrest its progress."

Fourth Meeting, March 25, 1857.

Dr. Bagot related a case of *Abdominal Presentation* in which unusual difficulty was experienced in the introduction of the hand; the introduction not having been effected until evisceration had been performed.

Dr. Jennings read the following communication from Dr. French, of Ballygar, in the county of Galway:—

"The extreme rarity of quadruplet births is sufficiently established by the fact, that among the vast number of women delivered in the Rotundo Hospital since this institution was first opened for the admission of patients, on the 8th of December, 1757, down to the close of the year 1855, amounting in all to 170,901, labour under this particular variety of complication has been witnessed only once, namely, in the year 1788, during the second year of the Mastership of Dr. J. Clarke. The following case, therefore, which has occurred in the practice of Mr. French, of Ballygar, in the county of Galway, and which he has forwarded for the information

of this Society, will be regarded as not destitute of interest, not merely as furnishing another authentic instance of this form of plural pregnancy, but also in that it presents some features of considerable importance.

"Bridget Loghan—aged 38, a stout, healthy countrywoman, several months advanced in this her sixth pregnancy, whose previous deliveries had been in every respect perfectly natural, and who represents that, with the exception of having recently become thin, pale, and suffering from œdema of the feet and ankle-joints, her health has been as good as during former pregnancies; her unusually great size, which had attracted the attention of all her acquaintances, and caused them to suspect that she was carrying twins, not even preventing her from uninterruptedly discharging the laborious duties of her household—was on Saturday, the 10th January last, attacked by slight uterine pain, which continued until the following Monday evening, when, about 11 o'clock, she was, under the supervision of a midwife, delivered of a living female child, which presented by the feet. Within the course of the ensuing hour, a second female child, which presented similarly, was expelled without assistance. All uterine action now disappeared; and, after the lapse of twelve hours, the uterus still continuing large, created a suspicion that there might be still another child, and induced the attendant, who had moreover become alarmed by the non-expulsion of the placenta, to at length summon Mr. French, who arrived on Tuesday morning, at 12 o'clock. On placing the hand over the umbilicus, Mr. French instantly detected the presence of the distended uterus; and on making a vaginal examination, found the head of a third fœtus floating above the brim. He at once administered a dose of ergot, followed in half-an-hour by purgative medicine. After the lapse of two hours, finding the patient still in the same state of uterine inertia, Mr. French at once proceeded to deliver her by version. This child proved to be a male, and only breathed for a few minutes. The abdominal tumour still being very large, the hand was again introduced, when the membranes of a fourth child, also presenting by the head, were detected. These being ruptured, delivery was effected, as in the preceding instance, by version, the child, which was a male, being born alive. The quantity of liquor amnii in both these cases was exceedingly great. In consequence of the total absence of uterine contraction, it now became necessary to remove the placentæ by the hand. There were two in number. The following is Mr. French's description of them:—

"'To the centre of that first extracted there was attached a single "stalk-like" funis, about one inch in length, which then divided into two branches, the last child and its membranes being (according to Dr. French's views) enclosed within a bag of membranes, common to it and to the third; the other placenta was of the ordinary "battledore" species. The children all died: the first on the second day, the second on the third day, the third immediately after

birth, the fourth after the lapse of a few hours. The convalescence of the mother was rapid and complete.'"

Dr. Jennings concluded with the observation:—"If Mr. French's description of the first placenta be correct, the only way in which we can account for the anomaly is, by supposing that two totally distinct embryos were developed in a single blastodermic membrane, and thus became subsequently included within a single amniotic membrane, a deviation from the customary law of nature, directly contrary (so far as we are instructed) to all received doctrines of ovology. Indeed, on more carefully reading his own history, we find that he had to rupture a distinct set of membranes for each of the two last children, thus proving that there must have been two separate amnions. It is probable that had his examination of the placenta been more careful, he would have found that there were originally two distinct 'battledore' placentæ, the edges of which, together with the placental extremities of the funes, had become intimately and similarly fused together by adhesion. Had both children been in any way connected (as for instance the Siamese twins), we could readily understand them to have been another specimen of '*monstrosity by inclusion*,' both being inclosed within a single amniotic sac, in consequence of two ovula having been originally included within a single vesicle,—a sport of nature, not confined (as we are well aware from the writings of the immortal Harvey) to the animal kingdom.

Fifth Meeting, May 9, 1857.

Dr. M'Clintock brought forward some cases of *Laceration of the Vagina and Uterus*, in illustration of the obscure character of the symptoms which occasionally accompany such formidable accidents, and the consequent difficulty of making a positive diagnosis.

Dr. Sinclair read the following remarks on the *Excitation of Fœtal Movements by Cold;* communicated by Dr. Aveling, of Sheffield:—

"Professor Simpson and Dr. Tyler Smith have done a great deal lately towards depriving us of one of the most useful signs of pregnancy. Both deny that the cold hand applied to the abdominal walls of the mother has any power in producing movements in the fœtus.

"Professor Simpson says[a]:—'It is very generally believed by accoucheurs that the sudden application of a cold hand, or other similar body, to the cutaneous surface of the abdomen of a woman advanced in utero-gestation, is capable of exciting movements on the part of the fœtus; and such application has been often recommended as one of the simplest and best means of ascertaining, in doubtful cases of pregnancy, both the existence and vitality of the child[b].

[a] Obstetric Works, vol. ii. p. 149.

[b] See, for example, Montgomery's Exposition, &c., p. 89, &c.

But as there is no direct organic communication between the abdominal walls of the mother and the body of the fœtus, or between the nervous system of the mother and that of the child in utero, the power of exciting muscular movements in the latter by a sudden impression of cold upon any part of the abdominal maternal skin, seems, physiologically considered, an impossibility; and clinical observation and direct experiment seem to me to prove the whole idea to be fallacious.'

"I hope before the conclusion of this paper to show that it is not impossible to account, physiologically, for the muscular movements of the fœtus which follow the application of cold to the abdominal maternal skin. Before proceeding to this, however, let us examine Dr. Tyler Smith's opinion. He says[a]:—'A very common plan is to place the cold hand, or the hand just taken out of cold water, upon the abdomen, with a view to excite the movements of the fœtus, for the purpose of diagnosis in suspected pregnancy. It is imagined that the fœtus is affected by the temperature of the external hand. When we consider, however, that the integuments and abdominal muscles, the uterus, membranes, and the liquor amnii, all intervene betwixt the cold hand and the fœtus, it is rather too much to suppose that any direct thermometric influence can be exerted on the embryo by such means. A reflex contraction of the uterus itself, from the application of cold to the abdomen, is readily comprehended; and no sound physiologist would think of giving any other solution to such movements, if the experiment were performed either during or soon after parturition. Why, then, accept such a different explanation of the movements of pregnancy?'

"I hope I shall not be considered an unsound physiologist if I now proceed to ask you to accept a different explanation.

"That fœtal movements may be produced by cold applied to the walls of the abdomen has been empirically acknowledged as true for a long period. The time has now come when it must be substantiated by science, or fall.

"The fœtal movements are produced by pressure.

"1st. The sources of pressure are:—

"*a.* The hand of the operator.

"*b.* The muscles of respiration.

"*c.* The uterus.

"*Pressure from the hand.*—The degree of pressure will vary with every experimentalist, some having light, others, heavy hands. In cases where the walls of the abdomen are very fat, the pressure required to distinguish the uterus will be greater. The effect of the hand has hitherto, however, been insignificant when compared with the other two sources of pressure, as cold alone has been considered the chief agent in producing the motions of the fœtus. The pressure

[a] On Parturition and Obstetrics, p. 99.

of the hand is much lessened by having to pass through the walls of the abdomen, the parietes of the uterus, and the liquor amnii. Notwithstanding this, Professor Simpson considers, when fœtal movements do occur, that the pressure of the hand upon the fœtus is their only cause.

"*Pressure from the Muscles of Respiration.*—When the hand, dipped in water of a low temperature, is applied to the abdomen suddenly and unexpectedly, the sensation of cold produces a violent act of inspiration, which is thoracic in its character; for, instead of the abdominal muscles relaxing, as is usually the case when the diaphragm descends, they contract, and consequently the contents of the abdomen are firmly compressed. Cases are on record in which, from the violent contraction of the abdominal muscles, the viscera have been ruptured. It is easy, therefore, to see that the pressure upon the uterus, obtained by causing the diaphragm to descend, and the abdominal muscles to contract, may be very considerable, and it is also evident that the pressure thus caused must act more completely than that which is obtained by the hand alone. The next source of pressure is from *the uterus* itself. It is generally acknowledged that cold applied to the abdomen produces a reflex contraction of the uterus. Acting upon this principle, cold is used for the purpose of arresting 'flooding.' And cold water, injected into the vagina, is sometimes employed to bring on premature labour. Besides this, the sudden application of cold produces an emotion of surprise; and it is well known that emotions sometimes react so powerfully upon the uterus as to cause abortion. It may be stated as a fact, then, that the uterus contracts and exerts a pressure upon its contents when cold is applied to the abdomen.

"I have only now to point out how the pressure of the hand, the pressure of the muscles of respiration, and the pressure of the uterus, produce the fœtal movements.

"2nd. Pressure produces fœtal movements—

"*a.* By causing excito-motory actions in the fœtus.

"*b.* By impeding the circulation in the fœtus.

"*Excito-motory actions in the Fœtus.*—Professor Simpson has pointed out that the parts of the fœtus which lie in contact with the uterine walls, and are consequently the most liable to be irritated, viz., the sides, knees, and feet, are also the parts most susceptible to the excito-motory stimulus[a]. This curious fact is the key to most of the fœtal movements. If the hand, abdominal muscles, or uterus, press in an unusual manner upon any part of the fœtus, a reflex motor action will be produced tending to remove that pressure. This, then, is one of the ways in which the wet hand applied to the abdomen produces fœtal movements. The next, though less evident, has, I believe, considerable effect in their production, viz., *by impeding the circulation in the fœtus.* The circulation in the fœtus

[a] Obstetric Works, vol. ii. p. 116.

is impeded by the pressure upon, and the contraction of, the uterus, which, combined, not only partially close the utero-placental vessels and prevent the proper oxygenation of the blood, but also compress the placental mass and umbilical cord so as to obstruct its normal current. These two causes produce in the fœtus a partial and temporary state of asphyxia, in which condition Dr. Marshall Hall has shown that the reflex nervous system is more easily excited. This condition, therefore, favours the production of excito-motory actions in the fœtus when pressed upon from without. And, besides this, convulsive movements take place in the fœtus when in a state of asphyxia, which, when added to those whose origin is external or reflex, help materially to prove the existence of a living fœtus in the uterus.

"In conclusion, I would say that my intention has not been to overrate the value of the 'cold hand' test, but rather to prevent its falling into entire disuse. It must always be remembered that motions which sometimes take place in the stomach, bowels, abdominal walls, and uterus, may be mistaken for the movements of the fœtus; a little skill, however, will generally enable the operator to distinguish which are the true and which are the spurious."

A new Symptom of Rupture of the Uterus.—Dr. M'Clintock related some cases of rupture of the uterus and of the vagina, to illustrate the obscurity which may occasionally surround the diagnosis of this accident when occurring during parturition. He particularly drew attention to a symptom observed in one of the cases, which he considered might hereafter be found of value as a diagnostic of laceration of the uterus or vagina. This symptom was *an emphysematous state of the integuments covering the hypogastrium*. Its existence was detected by the stethoscope while searching for the fœtal heart. Examined for in this manner, the crepitation was loud and distinct, but to the hand it was not so obvious, except when firm pressure was made in the proper situation, then the crepitus was evident, and was recognised by Dr. G. Montgomery, and by several pupils who happened to be present at the case. The other symptoms present were of so ambiguous a kind that the possibility of rupture having taken place seemed doubtful. There was no prostration, no recession of the presenting part, and no cessation of the pains; the woman was able to be up and to walk about. Having ascertained that the emphysema had not extended downwards from the chest or neck, and that it was confined to the suprapubic and iliac regions, Dr. M'Clintock inferred that the air had obtained an entrance through some rent in the genital passages. Acting upon this conclusion, the woman was delivered by craniotomy (the fœtal heart had not been heard for two hours previously). She sank rapidly after delivery, and died in a few hours. The left broad ligament was found emphysematous, and a tear existed in the left side of the uterus at the junction of the body and cervix.

At some distance from this the peritoneum was found rent also, and a considerable quantity of blood had been effused into the abdominal cavity."

Dr. George Montgomery brought before the Society the case of Mary Doyle, aged 26, who was delivered in the Rotundo Hospital, by craniotomy, of her fourth child, a boy, on account of unequivocal signs of rupture of the uterus having taken place. She was twenty-six hours in labour, six in the second stage.

The head remained all through high above the brim; as soon as the perforator was introduced, an immense quantity of water made its escape, and the head came down at once upon the perineum, proving to us at once that it was a case of hydrocephalus. She sank rapidly, and expired about thirteen hours after delivery.

A post-mortem examination confirmed our opinion upon the subject.

Dr. George Montgomery mentioned that his reason for bringing this case before the Society was in order that he might exhibit to them the skeleton of the fœtus, and draw their attention particularly to the *frontal bone*, which in this instance was composed of a "*single piece*," and had only *one point* of ossification, directly in its centre, all the fibres radiating from it to the circumference. He remarked that in case this head had not been hydrocephalic, there would have been much difficulty experienced in detecting what the position of the head was in.

Dr. George Montgomery also alluded to a case which came under his own observation, where a suture was found existing as far as the occipital protuberance, and which gave the posterior fontanelle a diamond shape, having in front the sagittal behind this occipital, and on either side the lambdoidal suture. In this case the presentation was mistaken for a *face to pubis;* but after birth the posterior fontanelle was found as large as, if not larger than, the anterior one.

TRANSACTIONS OF THE BELFAST MEDICAL SOCIETY.

SESSION 1857–58.

June 1, 1857.

The President, Surgeon Browne, R. N., in the Chair.

The President delivered an opening Address.

Dr. Murney read the history and treatment of a case of *Popliteal Aneurism*, terminating fatally on the twenty-sixth day by rupture of the upper part of the popliteal vessel, after complete consolidation of the tumour. The following were the points of interest of the case:—

A man, twenty-five years of age, of middling stature, and of temperate habits, was admitted into the Belfast General Hospital on

the 11th of April last. He stated that of late he had been an apprentice as moulder in a foundry; was previously a soldier for two years, fifteen months of which time he spent in the Crimea during the progress of the siege of Sebastopol, when he was exposed to the severity and hardships of trench duty: although imperfectly fed and clothed, he was never on the sick list. On his return to England at the termination of the war he was sent with his regiment to Aldershot; about a month after his arrival there he had what he described as a "*weak*" or "*fainting fit;*" after the recurrence of two or three such "*fits*" he was discharged the service on a small pension. Eight weeks before admission into hospital the formation of a tumour in the left popliteal space attracted his attention; this rapidly increased in size, and ultimately became as large as a cricket-ball. The usual well-marked symptoms of aneurism were present. Examination of his chest indicated dulness over the sternum, stretching from the middle of the first bone downwards to a line corresponding to the cartilages of both fourth ribs; a coarse *bruit de soufflet* was heard over the track of the ascending aorta, becoming faint towards the apex of the heart, most intense about the junction of the first and second bones of the sternum. An anodyne draught of hyoscyamus and solution of morphia at bedtime each night, and infusion of digitalis, were ordered.

On the 13th of April Carte's compressors, one for the groin, the other for the lower part of Scarpa's region of the thigh, were applied, and the patient was instructed how to manage the instruments. On the second day after their application the impulse in the tumour was less marked; on the fifth the diminution in the force was more decided; on the twelfth the pulsations in the ham were very much lessened, in fact, not more than distinctly perceptible; at the same time the tumour was quite hard, and of its original magnitude. An œdematous condition of the foot and leg, which had existed for some time before admission, now became extremely troublesome; at first, relief was experienced from the application of a bandage, but in a little time he fancied it added to his sufferings, and requested it to be removed; afterwards a warm lotion of spirit and camphor mixture gave him some little comfort, but it also had to be abandoned. A pulsating tumour was now noticed at the upper extremity of the sternum, projecting between the origin of the sterno-mastoid muscles.

On the fifteenth day the impulse was scarcely perceptible in the popliteal region, and he stated all pulsation had ceased for about half-an-hour on the day before.

On the seventeenth day the circulation could no longer be detected.

On the twenty-first day of treatment several bullæ, which had formed upon the instep, different parts of the leg, and popliteal region, burst, and a large quantity of serum tinged with blood passed from the limb; more or less continued to ooze from various points for the next six days.

On the evening of the twenty-seventh day the case terminated fatally, with extreme rapidity, in the following manner:—During the evening he had been restless and fretful; after remaining perfectly quiet for a short time he screamed for the nurse, who ran to his assistance and found his bed deluged in blood; the house surgeon was instantly called, and although not more than two minutes could have elapsed from the first call of the patient until he was by his side, the man gave merely a few long-drawn inspirations, and ceased to live. When the body was being removed to the dead-house, a large clot (which was shown to the Society) was observed hanging loosely from a jagged, irregular cavity in the ham; it was seven ounces in weight, and of firm consistence; the lower part of the popliteal artery could not be traced in it, but at its upper or proximal end a portion of the vessel, about an inch and a half long, was found; this piece of tube terminated in a cæcal extremity below; its upper margin was sharp and well defined, as if cut with a knife. Unfortunately, the friends of the deceased would not permit the slightest examination of the body. It was evident, however, from the atheromatous condition of the artery, that death had been caused by rupture of the diseased coats above the site of the aneurismal tumour, and that the extravasated blood had dissected the hardened mass which constituted the clot.

Dr. Murney had no doubt that a post-mortem examination would have shown an aneurism involving the arch of the aorta, and also an extensive amount of disease of the arterial coats in different parts of the body. From the first he looked upon the case as unfavourable; from the magnitude of the tumour after an existence of eight weeks; from the occurrence of the disease at the early age of the patient, viz., 25; and from the presence of disease in the trunk as well as in the extremity.

July 6, 1857.

The President in the Chair.

Mr. Browne, R. N., read the following case of *Melanosis Oculi*:—

"Before proceeding to detail the case of melanosis oculi which I am this evening to lay before the Society, I beg leave to make some observations upon the nature of the disease under consideration. There cannot be a question but that melanosis is closely allied, in some respects, to tubercular and cancerous deposits, or growths if you will, bearing some resemblance to both; like tubercle, it has not any trace of organization within itself which the cancerous growths have, but, like all of these, the deposit of which it consists, once commenced, goes on to invade and destroy the organization with which it is in contact, finally leaving a mere inorganic or foreign mass in the place of the vital structures which it had caused to disappear. Like these diseases, also, it is not a merely local morbid action, but depends upon a vitiated state of the system, the nature of which and the cause we do not comprehend. There is no appre-

ciable sign by which the advent of such a development can be prognosticated, nor do we know what is really the first step in this fatal deterioration of the frame; hence in these so-called malignant affections we cannot adopt any means to prevent their origin and consequent progress. It must also be admitted by every one, that in all of these diseases, whether the system be or be not in the first instance affected, it very soon participates in the morbid action, and then the disease, no matter under what aspect or name, is no longer a local malady and removable. From this observation it will be seen that I consider these affections, or some of them, removable. I certainly do,—my own belief being that in all cancerous and analogous growths, regarded as malignant, the system has, in some way, imbibed the cause of diseased action, and has deposited in one or several localities the product; where it becomes the radicle of local morbid growth, where it increases, from day to day, superseding the normal structures, and from whence, after a time, germs of the same deposit are taken into the system,—so largely impregnating it, that no sooner is the local affection, the morbid depository, as it were, cut off, than the system takes steps once more to throw off the incompatible element, and forms a new deposit, from whence new germs spring, enter the system, and finally, so largely charge it with the morbific matter, that almost every organ becomes the recipient of this destructive product, and hence the disease is necessarily irremediable and fatal. I believe, also, that in the very early stage of many of these growths, before the taint has been re-absorbed into the circulation, that the disease can be removed; that hence we have many cases of complete recovery after the excision of undoubted cancerous and analogous deposits. Now I consider that melanosis peculiarly illustrates the two positions I have assumed. It is an inorganic matter imbibed into the system, in some peculiar way, is deposited in some locality, very frequently in the eye, grows there, and not only destroys the sound structures among which it has been thrown, but, after a time, affords those germs which largely enter the system, the circulation, and, being incompatible elements, must be got rid of: hence they are deposited in several of the organs of the body—the eye, skin, and liver, being those in which, from some cause not to be defined, the deposit most usually takes place. Very early removal of the eye, when the disease has been developed there, has frequently preserved the constitution from contamination, and consequently has saved life; while late extirpation of the organ has nearly always been followed by an outbreak of the disease in several localities. Hence I feel satisfied that, whenever we are certain that melanosis has attacked the eye, for instance, the diseased part should be immediately removed; and I think the same remark may be properly applied to the cancerous and medullary forms of disease also, especially when the eye is the affected part. Melanosis, however, affords, I consider, the best hopes, because the disease is at first confined to the choroid coat, and does not affect the surrounding parts until the growth has made its exit by the ulcerative destruction of

the cornea or sclerotic. It is true, it is occasionally seen to commence in the conjunctiva: that species of melanosis I am led to regard as not of the so-called malignant character. Now, true cancer or carcinoma always attacks the conjunctiva first, and very soon implicates the adjoining tissues both of the eye and orbit, and hence can scarcely be all removed by the knife. Medullary cancer—fungus hematodes of the eye—is usually found to begin in the retina, at the terminal portion of the optic nerve. Thence the disease spreads out into the globe, and probably, at same time, it extends back towards the brain in the structure of the optic nerve, rendering any operative proceeding more than doubtful as to its results. I have had some personal experience of each of these affections, and the sentiments I have just expressed are founded upon that experience. With regard to melanosis oculi I can refer to three cases: the first was in a servant who lived with a gentleman in Belfast some twelve years ago, and was under the care of the late Dr. Saunders; that gentleman advised early extirpation of the eye, in which view I fully concurred; but, unfortunately, the patient would not consent until the disease had greatly advanced. When the ulcerative process had gone on to destroy the cornea, a large black fungus protruded, and soon after, from the irritation, the patient's health began to fail. Then, and not till then, when her chances of recovery were very greatly lessened, would she be persuaded to part with an organ that had long been quite useless. At length the operation of extirpation of the eyeball and contents of orbit was performed by Dr. Saunders; all went on well for about a week, when erysipelas attacked the face, and the patient sank under the attack. Dissection showed that the disease had become developed in the liver and the kidneys the result, according to my theory, of the delay of the operation, until the system had been deeply tainted by the entry into the circulation of the deleterious element.

"The next case was one of my own: the patient was a man aged 57, who came to me from the country for advice in the year 1851. At that time he had lost the sight of his right eye for more than two years. When he applied he had an enlargement of the globe, with the cornea pushed forward, and the iris and lens lying close behind it; while the entire anterior portion of the sclerotica presented a dark bistre hue, and was nodulated; the diagnosis was very easily made, and I advised immediate extirpation. This the poor man would not consent to, especially as he was not suffering much pain. He returned home, and I did not see him for some nine or ten months, when he again presented himself: the disease in the meantime had greatly increased, the cornea had given way, and the front part of the globe presented a large dark fungous-like growth, but which was not vascular; the globe was also enlarged, and the patient had constant severe pain in the eye, along with excruciating headach. His general health had also considerably declined; he was then willing to submit to any steps that would likely relieve the pain he always had to endure. I then pointed out to him the folly of having

delayed compliance with my former advice, and the great uncertainty, in the then existing state of the disease, of a successful issue. However, he became most anxious to be relieved from the torture he had to endure, and entreated me to operate. I accordingly extirpated the eye and its appendages, being obliged to clear out the entire orbit, as I found traces of the melanotic deposit as I proceeded. The day after the operation he felt pretty well, and for about a week continued to improve, the headach having completely subsided; but on the eighth day signs of erysipelas manifested themselves, and soon spread over the entire head and face, the periorbital periosteum being also attacked. On the twelfth day he became comatose, and sank during that night. I was not allowed any post-mortem examination.

"I now come to relate a more satisfactory case, at least as to its immediate results. Early in the month of October last I was consulted by Miss B., aged 19, a native of England, regarding disease of the left eye, with loss of vision. She complained of deep-seated pain in the eye and brow of same side, with severe headach, especially over the parieto-occipital region. On examining the eye I observed the conjunctiva considerably congested, and large tortuous vessels, filled with dark-coloured blood, scattered through it. The sclerotic also presented a deep bluish tint, especially over the attachment of the ciliary body. The cornea was quite clear, the pupil slightly dilated, and acting rather slowly under the stimulus of light. When I had dilated the pupil by means of atropia, I observed that the front part of the lens was clear, but that either in its structure, or immediately behind it, there was a discoloration resembling that which is presented by the buff upon recently coagulated blood. On inquiring the history of the complaint, I found that my patient had first noticed some dimness of vision about the month of May, 1855; this being the only symptom present; in the June of 1856 she consulted Mr. Middlemore, of Birmingham, a distinguished ophthalmic surgeon, who at once told the patient that the eye was lost for the purposes of vision, and stated to her father that he feared it might be serious: from this I am led to infer that he suspected some development of medullary disease, or of melanosis. Upon summing up all the evidence I had before me, and duly estimating the features the case then presented, I arrived at a like conclusion. However, as there still existed a doubt, I felt disposed only to palliate symptoms by the use of sedatives externally and also internally; I also prescribed alteratives for my patient.

"During the last winter and spring I occasionally saw the young lady, the disease seemingly making little progress. From February till June I did not see her. On the 19th of that month she came to me, stating that lately she had suffered more severely from headach than ever, and could not obtain any rest. On then examining the eye I observed a very marked change in its aspect: the globe had become enlarged, especially in its antero-posterior diameter, being much elongated; the iris, with the pupil greatly di-

lated, and the lens being thrust against the back surface of the cornea; the sclerotic over the ciliary body was very dark-coloured and nodulated from the unequal thinning which had taken place, and the entire globe presenting a very serious-looking condition. I had then little doubt that the case was one of melanotic deposit within the eye, and that the sooner the organ was removed the better. I determined, however, to proceed cautiously, and explained to her father the nature of the disease I suspected, and that while a simple operation, removal of the cornea and lens, might suffice, it was more probable I should, for the patient's safety, have to take away the entire eye. The matter having then been fully laid before the young lady herself—a girl possessing uncommon resolution and strength—she at once determined to submit to any means for her relief from pain, and as she felt convinced that the vision of the eye was long since extinguished beyond any hope of restoration, she did not care much what was to be done. Having prepared my patient by the exhibition of some aperient medicine, and light diet, for three days, on Monday, the 22nd of June, I proceeded to operate, being kindly assisted by Dr. Halliday and Mr. M'Fall, the House Surgeon, General Hospital, in the manner I shall now describe. The patient was extended on a sofa before a good light, her head being well raised upon cushions; I then put her profoundly under the influence of chloroform. The first step in the operation was to make a section of the cornea, and to extract the lens; this having been done, we examined the interior of the eye by raising up the corneal flap, when it became evident that a dark abnormal mass occupied apparently the space behind that from which the lens had been removed. I then passed a curved needle with a strong ligature through the front part of the sclerotic, from without inwards, immediately behind the part which was enlarged and nodulated; I next excised this portion completely, which removed the iris and entire ciliary body, along with some of the sound sclerotic. Immediately there was an escape of a dirty thick fluid instead of the vitreous humour, leaving the globe empty and collapsed. Having carefully examined the part I had excised, I felt satisfied the case was one of true melanosis, and that the entire globe must be extirpated. This I did by dividing the conjunctiva with a sharp knife where it is reflected from the lid unto the eye, and then with a curved scissors dividing the muscles, vessels, and nerves, anterior to the suspensory ligament of the eye,—the fascia, which immediately surrounds the globe,—keeping close to the sclerotic in my progress. There was not much hemorrhage, except from the central artery of the retina, which bled freely after the front part of the eye had been excised and when it was emptied; but this soon ceased after the division of the optic nerve, and when I used some infusion of matico and cold water. Now it will be apparent that this operation of removing the globe of the eye and that of completely emptying the orbit are very different operations, as regards severity and the shock to the system. It will also be understood that it is only in a disease like melanosis, confined to the

inner tissues of the eye, that it is applicable, or when cancer has just begun to be developed in the front part of the organ near the sclerotic. The patient has made an excellent recovery, has been quite free from pain ever since the operation, and has good rest, and feels happy in being clear of the torment she had suffered for some time.

"On examining the eye after removal, we found, in addition to the large quantity of dark thick fluid, a considerable deposit of melanotic matter, especially in the ciliary body, towards its outer side; this was of a very dark hue, while a portion attached by a small pedicle to the choroid at its termination in the ciliary body, and of a bistre colour, had lain behind the lens, and it was this seemingly which had displaced the latter body. The choroid was thickened throughout, and darker than natural, having several small points of melænic deposit in its structure. The retina had disappeared, and, as I have mentioned, the vitreous body was disorganized, its place being occupied by a melænic fluid. The ciliary body was completely charged with the diseased structure, and the sclerotic anteriorly was thinned, and of a dirty hue. The optic nerve, when cut through, was quite sound. This concludes my observations; and I will merely add, that I have every hope my patient will remain free from the disease."

The PRESIDENT then called the attention of the Society to two specimens of *Fractured Bones* on the table, and gave the history of the cases. He said:—"The first specimen is the left tibia and fibula of C. O'N., a woman aged 40, who was admitted into hospital on the 26th of May last, having just sustained a compound fracture of both bones of the left leg, by falling from some height upon loose bricks. When admitted, the tibia protruded through a large ragged opening in the soft parts, to the extent of three inches; there was considerable hemorrhage, with great bruising of the structures along the leg; the fracture of the tibia was at its junction of the lower and middle thirds; the fibula was fractured about an inch higher up. When I first saw the patient, the morning after the accident, the limb had been put up in the many-tailed bandage, and on Liston's inclined splint. I did not then disturb the appliances; but the day after, I examined the limb, and found it greatly swollen and discoloured, the temperature, however, being quite natural; the general aspect of the parts caused me to fear that the attempt to save the limb would not be successful. Very soon, enormous suppuration took place, and several openings had to be made to give exit to the matter. At the end of a week, after a consultation, amputation was proposed to the patient; this she would not hear of; and as she was a very robust, powerful woman, the proposition was not then further pressed; and it was not till the 20th of June, when the system had considerably succumbed, that she would consent to the operation. On that day, after the patient had been brought under the full influence of chloroform, I removed the limb at the knee-joint, by making a semicircular incision across the cen-

tre of the patella, from either condyle; then, by dissecting the flap upwards, and cutting through the extensor tendons, close to the patella, the joint was laid open; the knife was then passed in behind the head of the tibia, and a good flap cut out of the calf. The operation was finished by sawing through the femur, immediately above the condyles; one vessel only, the popliteal artery, required ligature. These proceedings produced a capital stump, and the patient bore the operation very well, very little blood having been lost in the operation. The part was carefully put up with wetted straps of lint. On opening the stump on the 23rd of June, it was found that union had taken place at several points, but that the edge of the outer part of the posterior flap showed a tendency to slough; the stump was then dressed with a stimulating dressing, and warm poultices were applied three times a day; tonics and stimulants, with opium, being administered freely to the patient. During all this time the patient had improved in condition; and the slough, to the extent of two inches in depth from the outer part of the posterior flap, was thrown off; and now, the 6th of July, there is every appearance of the stump healing up rapidly."

N. B.—At a subsequent meeting of the Society the President, referring to this case, stated that the patient had done well till the 15th of July, when she became feverish and restless, with great irritability of stomach, and pain at the epigastrium; and although every likely means of relieving her were used, she sank on the 24th of July.

The body was examined twenty-four hours after death, when it was found that the liver was much enlarged and softened; the mucous membrane of the stomach, especially at the pyloric end, much congested, and having many points softened and disorganized; and that there were some adhesions among the small intestines, the result of subacute peritonitis.

The PRESIDENT next related a case of severe *Railway Injury*, and its results, as follows:—

"J. S., aged 32, a railway official, while shunting a luggage-van, lost his balance, and one of the wheels passed over the right ankle-joint. When he was brought to hospital, immediately after the receipt of the injury, on the 27th of May, he was suffering great pain, and the system was much depressed from the shock. On examining the injured part, a small lacerated wound, about one inch in length, was observed on the outer side of the os calcis, and over its anterior portion; there was already great effusion around the joint, imparting a soft, puffy feel, and motion of the part imparted the sensation as if the calcis and astragalus were comminuted; I may remark also that there was smart hemorrhage. I was quite aware that railway injuries, like cannon-shot wounds, may completely smash the bones, and destroy the muscular tissue, without making any great wound of the integument; hence I felt satisfied that, in the then present instance, the structure of the ankle-joint was injured beyond the hope of cure, although the wound of the

soft parts was so inconsiderable; consequently, I at once expressed my conviction to the patient that his only safe course was to submit to have the part removed at the joint, intending to perform Syme's operation; but he would not submit, and no reasoning could convince him of the risk he ran by persisting in his opposition. After some days, profuse suppuration ensued, the result of the very active inflammation that had taken place; still, a fortnight of great suffering was endured before the patient would submit to his now only chance for life—amputation of the limb.

"On the 10th of June, the patient being under chloroform, I removed the injured part by amputating at the middle of the tibia. The wound was put up after three or four hours; there had been very inconsiderable loss of blood; and on the third day the dressings were removed. On examination I found that union had taken place at two or three points, but that the general aspect of the stump was not satisfactory; the patient was also suffering from thirst, great heat of skin, and nervous irritation. I prescribed diaphoretics and full doses of opium; on the morning of the 14th of June the patient had several severe rigors, with an increase of all the febrile symptoms. I then directed for him wine and brandy, beef-tea, &c., and quina along with the opium every four hours. On the 15th the rigors came on three times, and the patient seemed decidedly worse; I then resolved to give him mercury, so as to rapidly affect the system, and on the 17th the system became decidedly affected by that medicine. On the 18th the mouth was pretty sore, and the rigors had not returned during the preceding twenty-four hours. For several days the effects of the mercury continued, the rigors did not return, and the general aspect of the patient was somewhat improved; the stump, in the meantime, had been suppurating pretty freely. On the 24th I found that a chill, not amounting to a rigor, had taken place during the preceding night, and a rather smart shiver that forenoon. I then directed the mercury to be resumed, at the same time continuing the support of the system, and the use of the quina and opium. On the 27th the mouth was again sore, and the shiverings did not recur; the stump had then taken on the healing process, and looked pretty well, but the thigh was considerably swollen, without the slightest sensation of pain, however, in it, unless when strong pressure was applied along its inner side, and on the 6th of July the man was convalescing very well.

"In concluding this part of the paper, I may remark that I was induced to exhibit the mercury by a belief that the rigors depended more upon a local phlebitis than on pyœmia; but whatever was the cause of these alarming symptoms, the mercury unquestionably produced a marked salutary effect."

August 3, 1857.

Dr. Heeney, Vice-President, in the Chair.

Dr. Corry read the following case of *Traumatic Tetanus*:—

"July 25th. At 11 A. M. I was called to see J. C., a man of intemperate habits, about thirty-five years old. On my arrival I found him labouring under symptoms of trismus, being unable to open his mouth to a greater extent than one-third of an inch; pulse 85; skin cool and moist; slight difficulty in deglutition. Upon inquiry I was informed that about ten days previously he had snstained a slight punctured wound in his foot from a broken bottle; the injury, however, was of so trifling a character that it attracted little or no attention, and on examination the wound appeared to be in a healthy state. As his bowels were constipated, I orderd five grains of calomel, followed by a full draught of castor-oil and turpentine, twenty drops of chloroform to be also administered every hour, and a liniment, composed of cantharides, camphor, and turpentine, to be applied frequently. 3 P. M. Visited him in company with Dr. Sloane; symptoms much the same; bowels had acted freely; medicine to be continued. 7 P. M. Met Drs. Wheeler and Sloane in consultation. Symptoms continued unrelieved; increased difficulty in swallowing; considerable tenesmus; pulse 90; countenance anxious. A blister to be applied over the cervical and upper dorsal vertebræ, and afterwards dressed with mercurial ointment and extract of belladonna; three drachms of mercurial ointment to be rubbed in every four hours, and a draught administered, containing forty drops of tincture of opium.

"July 26th, 10 A. M. Visited the patient, in company with Drs. Wheeler and Sloane. Trismus still continued; tenesmus relieved; pulse 95. Slept well during night; has had no tetanic spasm; deglutition still more difficult. Mercurial ointment to be continued, and another draught administered, with beef-tea, and small quantities of whiskey and water. 3 P. M. Pulse 120; very restless; mouth slightly affected by mercury; has taken little or no nourishment. Treatment to be continued. 9 P. M. No improvement; has had several slight spasms in abdominal muscles. Ordered an enema, with one drachm of tincture of opium.

"27th, 9½ A. M. Pulse 130, very small; countenance extremely anxious; voice nearly inarticulate. At 6 A. M. had a severe tetanic spasm, which lasted several minutes, since which he has been able to swallow a small quantity of lemonade through a sponge. 10 A. M. Was seized with another spasm, during which the muscles of the neck, back, and lower extremities, were violently contracted, producing opisthotonos, and the pulse ceased at the wrist, probably from muscular pressure on the arterial trunks. The inhalation of chloroform appeared to afford relief, and the attack subsided in about six minutes. He then fell into a quiet sleep, which lasted till 12 noon, when he was seized with another spasm, which terminated fatally in about five minutes."

SEPTEMBER 7, 1857.

THE PRESIDENT in the Chair.

The PRESIDENT read the following cases of *Gun-shot Wounds:*—

"The late July riots have furnished some cases of gun-shot wounds, which I feel it my duty to bring under the notice of this Society, more from the happily rare occurrence of these injuries than from any peculiar features exhibited by the cases in question. The first to which I shall call your notice is that of Adam Ward, aged 13. On the afternoon of Saturday, the 18th of July, I was sent for to see two cases of gun-shot wounds which had just been admitted into hospital. On arriving there, and on examination, I found two lads, each of whom had been shot in the left leg; one of them the boy I have just named; the other will form the subject of our next notice. Ward lay on the bed, pallid and cold from the shock which usually attends gun-shot wounds, and also from the loss of blood; the wound had been plugged and dressed before his arrival in hospital, yet still considerable hemorrhage continued. Upon removing the dressing I found in the front of the left tibia, at the middle and lower thirds junction, a large wound made by a bullet of considerable size, likely of similar dimensions to the one which I now exhibit, and which was found in the leg of the other sufferer. The tibia was completely shattered, the fibula broken, and there was considerable swelling and ecchymosis about the ankle-joint. In tracing the course of the ball I found that it had passed though the bone, and then downwards, making its exit by a flap-like opening in the pulp and integument of the heel to its inner side. On consultation it was deemed right to amputate the limb, in consequence of the great amount of smashing of the tibia, and from the probability that the fracture extended into the ankle-joint, and that the posterior tibial artery was likely wounded, as shown by the active hemorrhage, and from the course of the shot. The bone, as here exhibited, will show the amount of injury, and that there would not have been any possibility of saving the limb with so much injury of the soft parts, and a torn tibial artery. The limb was accordingly amputated six inches below the knee-joint, and the stump afterwards healed rapidly, so as to admit of the patient being discharged cured on the 12th of August.

"This case illustrates the advantage of primary over secondary amputations, when contrasted with two cases which occurred about the same time: one of crushing of the ankle-joint by a railway accident, and where the patient would not submit to the operation urged upon him until his danger became imminent, and where the operation was not performed till twelve days after the injury. This man has had many backsets, ending in extensive suppuration of the thigh, and will yet have a struggle for recovery[a]. The other case

[a] This refers to the case of J. S., read at the meeting of the Society on the 6th of July.

is that of a powerful man, suffering under compound fracture of both bones of the leg, and where the attempt was made for three weeks to save the limb; amputation then became the only chance for saving life, in consequence of the drain and the irritation that had been set up. The operation was performed, but the system did not rally; symptoms of pyœmia set in, and the patient sank in four weeks after the limb had been removed.

"This brings me to the second case. Pat Murphy, aged sixteen years, was walking in company with Ward, when he suddenly felt 'the legs knocked from under him,' and on looking up saw Ward hopping on one leg with the blood streaming from the heel of the other; singular enough, Ward, though more severely injured, did not fall when struck. Both of these lads seem to have been hit at the same instant, and I am led to believe by the same discharge, the musket having been loaded with two balls, and both distinctly stated that they heard only *one* report. On examining Murphy I found a large bullet wound in front of the left tibia, an inch higher than the wound in his comrade; on introducing the finger it passed through the front of the tibia, and discovered that the back part of the bone was pushed out against the muscles of the calf; a steel director also struck against a substance which was either a leaden body, or a piece of bone bared of its periosteum; and I may here say that it is not very easy to determine between the sensation which these substances impart. On making firm pressure at the back part of the leg a projection could be felt, which was either the ball, or the bone pushed before it. The latter was my own view, and I determined to enlarge the opening in the front of the tibia, and thus endeavour to extract the shot without making any wound through the soft parts of the calf. This I effected by dilating the wound of the integument over the front of the tibia, and then with a cutting bone forceps enlarging the lesion of the bone. After a little trouble the bullet was found lying against the posterior wall of the tibia, which it had pushed before it. The finger detected afterwards one or two spiculæ of bone, which were also removed; the wound was then plugged carefully, and the limb put upon Liston's leg splint, the part wounded being covered with a soft, warm poultice. The case has progressed very favourably; free suppuration soon set in, and shortly granulations sprang from the bottom of the wound. A few days back Dr. Murney, under whose care the case has been since the 3rd of August, removed some small portions of exfoliated bone, and the part bids fair to heal up very soon. If you will examine the ball, you will perceive that it was projected with great force, and the wonder is that it did not pass through the limb. Five years ago I had two cases of gun-shot wounds of the tibia under my care in the General Hospital, both of which were a long time in healing, probably from the fact that in both the shot passed through the bone not very far below the tubercle of the tibia. With regard to the distance at which the two boys were from the person who fired the shots, I ima-

gine they were some two hundred yards, and that the projectiles were falling when they struck the limbs.

"While we were attending to the two cases just related, a girl named Maria Tynen, aged 17, was carried into hospital, said to be shot through the head; and, certainly, her appearance indicated the receipt of a very serious injury. She was deadly pale and cold, and nearly pulseless, and throwing herself about in that restless, distressed manner that great exhaustion from loss of blood usually produces. Soon after her reception into my ward she vomited a large quantity of coagulated blood. On examining her carefully, after the exhibition of opium and stimuli had somewhat quieted her, we found that the right eye had been shot through, and that the cornea was hanging outside the eyelids, which were greatly swollen; no trace of the foreign body could be found in any direction; but as the bleeding evidently proceeded from the posterior nares, we surmised that she had probably been shot by a slug, and that it was likely lodged in some part of the spongy bone, and hence the bleeding into the pharynx. I may say that although the injury at first seemed so very serious, we soon had occasion to change our opinion, and she recovered completely, having been discharged on the 20th of August with loss of eye, but never having had a serious symptom after the first twelve hours following the wound. The foreign body was never discovered, though it will likely enough make its appearance some day. I am here reminded of a case of gun-shot wound of the neck, which occurred in the July riots of 1852, and which was under my care in the hospital. The sufferer was, as in the instance just related, a young girl: she received a bullet in the neck, which struck her two inches below the right ear; the ball then passed through the sternomastoid muscle backwards, and sloping a little downwards, making its exit at the median line. In this course it struck the transverse pieces of a cervical vertebra, which was injured, showing what a narrow escape the girl had from instant death. She recovered perfectly in less than three weeks.

The PRESIDENT also read the following case of a *large fibrous Tumour of the Neck:*—

"Mrs. A. G., aged 34, a native of the county of Down, was admitted into the General Hospital, under my care, on the 22nd of July last, for treatment of a large tumour, seated on the back part and right side of the neck. The cast exhibited shows the size which the growth presented before removal. The patient stated that about two years since, when she was in America, she first observed a small tumour, about the size of a hazel-nut; this occupied a point opposite the centre of the present growth. For more than a year the progress of the tumour was very slow, but within the last five or six months it had increased very rapidly in size. On examining its attachments, as far as practicable, it was believed to be adherent to the subjacent parts, and to pass deeply in among the muscles of the neck, particularly between the trapezius and sternomastoid of the

right side, while it extended in length from opposite the second cervical vertebra to the right acromion, and in breadth from near the median line of the neck to a point beneath the centre of the sternomastoid muscle; still there was considerable mobility in the growth, leading me to believe that after the fascia was divided the tumour could be easily turned out. On consulting with my colleagues, it was determined to remove the tumour by the knife; consequently, on the 25th of July, the patient being brought under the influence of chloroform, I proceeded to operate by making a longitudinal incision through the integument covering the central line of the growth; this incision was ten inches in length, extending from above the spinous process of the second cervical vertebra to the point of the coracoid process. I then rapidly dissected back the posterior portion of the integument; in this dissection several superficial but very large vessels were cut through, from which the blood gushed out, showing how freely the growth was supplied. After the posterior covering had been completely removed, I endeavoured to turn the tumour over from behind forwards, but from the depth to which it was found to extend, this could not be done without cutting away a part of the tumour, so as to exhibit its deep connexions; I therefore excised a large portion of it, and then succeeded in raising it partially from behind; I next turned off the integument covering the front part of the tumour, and then found that the growth passed beneath the sternomastoid, so as to encroach upon the carotid, also downwards under the clavicle, close to the subclavian, while it was likewise found to be adherent to the acromion and the acromial end of the clavicle; however, by a steady and persevering dissection I succeeded in removing the entire diseased structure, tying the several vessels which were of necessity divided in my progress. During the operation my patient became very weak and faint from the great loss of blood; besides, she was one of those large, fat women, with a feeble circulation, who bear the loss of blood so badly; this caused considerable delay, and gave us much anxiety. However, the exhibition of brandy and ammonia, and an occasional rest, during which time the wound was filled with dried sponges, brought the patient safely through, after a prolonged operation of some thirty minutes. The difficulties and danger of the operation can be easily estimated when it is stated that the tumour was firmly attached over the spinous process of the second cervical vertebra, and to the transverse processes of the fourth and fifth; to the acromion and acromial end of the clavicle; a portion of the trapezius muscle was imbedded in its structure, while it was attached, though not firmly, to the splenius capitis and the sternomastoid, and rested on the scaleni muscles. The transversalis coli and suprascapular arteries, with minor branches, were divided, and the external jugular vein was with difficulty kept out of the way of injury. As I have already stated, the hemorrhage was very free, producing considerable collapse, from which the pa-

tient, however, recovered in a few hours. On the second day after the operation the wound of the integument was found to be united, except at one point; on the third and fourth a very large discharge of sero-purulent matter took place through the ununited part, but the judicious application of compresses, and a firm bandage, produced complete union of the entire wound before the twelfth day after the operation, on which day she returned home quite well.

"I cannot close this paper without thanking my colleagues for their able assistance and counsel under the trying circumstances of the operation. I should have stated that we were obliged to suspend the exhibition of chloroform from the state of weakness into which the patient sank; and I feel very happy that no untoward result ensued in the case, as some persons would likely have placed the accident to the account of the chloroform which had been exhibited.

"My own impression, nay, conviction, is, that the chloroform had nothing to do with the faintness of my patient, but that it arose entirely from the unavoidable loss of blood. And I may also state my belief that, had not chloroform been administered, a larger loss would have occurred in the early stage of the operation, as I am satisfied that the circulation is diminished when a person is profoundly under the influence of the vapour of chloroform."

Dr. Murney read the case of Patrick M'Whinney, a labourer, aged 22, residing at Gardiner-street, Belfast, a strong, well-made man, of healthy appearance; admitted to hospital at 1 A. M., August 27th. He states that being in the country, about three miles from town, while on a scaffolding about twenty feet from the ground, he missed his footing and fell, alighting on his back on a bank of sand; was able to rise; and with the assistance of two men, who supported him, to walk to a house in the neighbourhood, where he was put to bed; this was about 1 o'clock. About 3 o'clock he began to feel pain in his neck, and a sense of numbness crept over him, beginning in his back, and extending to his lower limbs, of which he gradually lost power and sensation.

He was placed on a car about 5 P. M., and brought to his own house in town; and while on his way lost power and sensation of his upper limbs also; when brought to hospital he was utterly unable to move, and complained of severe pain about the region of the third dorsal vertebra, while being turned in bed.

No displacement could be detected, and he could move his head, but with great pain to himself. He also stated that his penis had been erect from about 4 P. M., without being aware of it; pulse 80; bowels and bladder had been emptied about an hour previous to accident; respiration 21, carried on by the abdominal muscles and diaphragm. He was ordered a grain and a half of calomel and a third of a grain of opium every hour, and to have a drachm of strong mercurial ointment rubbed into the axillæ every second hour. 10 A. M. Pulse 80; respiration 20, diaphragmatic. Cathe-

terism was used, and about a pint of urine drawn off. Bowels not acted on. Continue the mercury; an enema to be injected; it acted slightly. 12½ P. M. Pulse 83; respiration 20; skin hot and dry; bowels not acted on; no further changes. Evening. Pulse 96, full and bounding; respiration 20; skin hot and dry. Catheterism; no mercurial action. Omit opium, and continue calomel and inunction. Venesection to twelve ounces; felt easier, and dosed during the night.

28th, 10 A. M. Pulse 94, softer; respiration 20; no motion from the bowels; skin hot. Catheterism; can move his shoulders, apparently by action of the trapezii muscles only; no mercurial action. To have an enema at 5 P. M. if the bowels do not act before. The blood which was drawn the night previous buffed and cupped; complained of bed being hard; action of trapezii more marked. Evening. Pulse 96, full; respiration 21; skin hot. Enema was returned, with large quantities of flatus; bowels not acted on; no mercurial effect. Catheter passed; urine slightly ammoniacal towards the end; mercurial ointment to be rubbed into groins also.

29th. Pulse 88; skin hot and dry; tongue dry and parched; bowels very free during the night; motions involuntary; no mercurial action; catheterism. A grain of calomel and a third of a grain of opium to be taken every half-hour. Also a grain of opium to be taken immediately, and repeated every alternate hour. 6 o'clock P. M. Catheter passed at his own request; can move his shoulders and head; bowels too free; involuntary motions. 9½ P. M. Pulse 84, soft; bowels moved; respiration 21. A suppository of ten grains of mercurial ointment to be introduced.

30th. Pulse 90; skin hot and dry; respiration 20; bowels same; catheterism. No change in treatment. Evening. Pulse 88, soft; skin hot and dry; respiration 21; bowels same; no mercurial action; catheterism; *urine cold;* is wandering.

31st. 10 A. M. Pulse 77, weak; respiration 15, carried on by the action of the clavicular muscles; bowels same; no action from mercury; catheterism; when about to introduce the instrument, the urine jetted in full stream for an instant. 11¾ A. M. Pulse imperceptible; respiration 15; died at 2 P. M.

The post-mortem examination was made two hours after death. There was not any rigor mortis. In making the incisions to lay open the spinal canal several arteries were cut across, which threw out dark blood *per saltum*, in a full stream, and continued to do so, but in a less degree during the progress of the examination. When the vertebral column was laid bare it was found that the lamina of the fifth, sixth, and seventh cervical, and first dorsal vertebræ, were fractured, but not displaced, so as to cause compression. On removing the lamina of the cervical and dorsal vertebræ several clots of blood were found lying on the membranes in the lumbar, dorsal, and cervical regions, the whole being much congested. On opening the membranes clots were found upon the surface of the spinal column, while

a clot an inch in length occupied the substance of the medulla, splitting and causing softening of its structure. The head was not examined, as there had not been any cerebral affection during life.

In the discussion which ensued the President referred to a case of injury somewhat analogous to that related by Dr. Murney, and which had been under his care in hospital two years since. The patient, a strong man, aged 40, in passing through a gateway arch when seated upon a bread-cart, incautiously raised his head; in a moment he felt himself precipitated to the ground; he was slightly stunned, but almost immediately desired the persons who had come to his assistance to look after his horse, believing himself not to have sustained any serious injury. On wishing to arise, however, he discovered that he had completely lost the power of moving either his legs or arms, but still had almost complete "feeling" in all his limbs. He was admitted into hospital on the following day, twenty hours after the accident; sensation remained only in a very limited degree; the fæces were passed unconsciously, but the urine was retained, and was regularly drawn off every twelve hours by a large catheter. The breathing was entirely performed by the diaphragm, and he was teazed with the constant desire to expectorate without the power of relieving his chest. He had pain in the region of the fourth cervical vertebra, especially upon pressure being made over that region, or on any attempt at moving the head. Gradually the remaining sensation was extinguished, and he lay dead, as to motion and sensation, from below the neck. In this state he existed for four days and a half, when he died comatose, having been delirious for twelve hours previously. During the progress of the case the urine changed very much in its character, and latterly deposited phosphates very copiously. The most distressing part of his suffering arose from the inability to expectorate. Deglutition was all along perfect. The pulse never rose above 100 beats in the minute until twenty-four hours before death; and the breathing was quite quiet until within the same period of his decease, when the pulse rose to 130, 140, and 160; and the breathing was 48. It should be remarked that, as the sensation was gradually extinguished, the left side was that first paralyzed.

As a post-mortem examination could not be obtained, the exact nature of the injury could only be surmised; but it is pretty certain that motion was at once lost by the lesion of the posterior columns of the spinal cord; that sensation was lost probably through effusion having taken place, the result of inflammation, or from slow extravasation within the spinal theca from small lacerated vessels.

On Myopathic Paralysis (from a forthcoming work, entitled, *Clinical Observations on, and Illustrations of, Muscular Paralysis*)[a]. By Dr. Hermann Friedberg.

The paralysis of muscles is caused either by a lesion of nutrition of the muscular substance,—myopathic paralysis (*Paralysis ex alienata musculorum nutritione*), or by an affection of the nervous trunks or nervous centres,—neuropathic paralysis.

A lesion of nutrition in its substance may render the muscle incapable of obeying the influences through which the motor nerves would excite it to contraction[b]. The muscle may, in consequence of the lesion of nutrition, appear paralysed, even when the motor nerves are still capable of conducting, and, so far as they are concerned, are in a condition to convey to it in sufficient amount, the influence of the brain, as the organ of the will, as well as of the spinal marrow, as the organ of reflex and involuntary action. This species of paralysis was formerly not recognised, and is still imperfectly understood.

Because the mobility of a muscle may be destroyed through motor paralysis of nerves, the existence of a neuro-paralysis has been maintained in every instance in which, in the absence of mechanical obstructions, a muscle is incapable of contracting; and, instead of referring the loss of function to a lesion of nutrition of the muscle, a "mobility-neurosis," "trophoneurosis," or "stability-neurosis" has been assumed.

A lesion of nutrition of a muscle *may* certainly also be the consequence of nervous paralysis, caused by an affection either of the nervous centres or of the nervous trunks running between these and the muscle. In such cases we have to deal with a neuropathic paralysis. The muscle is here deprived of an essential condition of its normal nutrition, namely, the state of alternating contraction and relaxation, and may, in consequence, fall into a morbid state, giving rise to a species of *myopathia marasmodes*, as I might call it. This will the more readily happen if the vaso-motor nerves are paralyzed. The lesion of nutrition of the muscles is, it will be seen, a secondary phenomenon in neuropathic paralysis, while in myopathic paralysis it is the primary momentum. Exactly the reverse applies to the cessation of the muscular contraction; in neuropathic paralysis it is the primary, while in the myopathic affection it is a secondary phenomenon.

In choosing the name "myopathic paralysis," I comply with the

[a] Klinische Beobachtungen und Erläuterungen über Muskel-Lähmung.

[b] "*Causa enim motus muscularis tanquam duplex considerari potest, vel delata ad musculum, vel prærequisita et præexistens in musculo. Prior causa ex voluntatis imperio per nervos defertur ad musculum,* sed frustra, nisi fabrica organica ipsius musculi bona sit." Gerardi van Swieten *Commentaria in* Hermanni Boerhave *Aphorismos de cognoscendis et curandis morbis. Tomi tertii pars altera. Taurini, ex typographia regia*, 1744, iv. p. 370.

necessity which, in my opinion, exists of giving the affection in question a denomination corresponding to its nature. I believe, moreover, that the following observations will secure me against a misunderstanding in reference to this appellation.

Muscular motion is the product of two factors, namely, of the excitation of the nerves and of the capability of contraction of the muscular fibres. The muscle is shortened when the nerves convey to it their electric power, after they are placed in that condition of excitation, which, according to M. du Bois-Reymond[a], is indicated by the electro-negative variation of the current. This power, transferable to the muscle, is set free through the chemical process in the nerves, and produces in its primary bundles the change of situation of the molecules necessary for shortening[b].

If the nervous trunks or centres have lost their power of conducting, or their excitability, the muscle can only contract so far as is effected by the elasticity of its tissue. But it then obeys, not a vital action, but a physical property, in consequence of which its molecules maintain their relative position, resuming it as often as they leave it. A vital contractility of the muscle, independent of the nerves, is not admissible; at least, not a single fact exists which can be regarded as a complete proof of Haller's muscular irritability. Neither do I find any such in the result of Du Bois-Reymond's experiments, according to which "we obtain spasms by irritating the muscles themselves, long after it has became impossible to excite them through the nerves"[c]. This result is fully explained by this, that the intra-muscular nerves are capable of retaining their excitability longer than the extra-muscular, which is quite in accordance with the law laid down by Eusebio Valli (in the Letters on Animal Electricity) and Ritter (in his Contributions to a more accurate knowledge of Galvanism, and in the results of his investigations), according to which the nervous centres die before the nervous trunks, and death, in the latter, proceeds from the centre to the periphery. The most recent support appealed to by the advocates of muscular irritability is the experiment performed by M. Bernard with curare. He, as is known, slit up the skin on the back of a frog, introduced a portion of curare into the wound, and showed on the animal, which was dead in four or five minutes, that electric excitation of the nervous trunks produced no spasm, while that of the muscle gave rise to contractions. The greater weight has been laid on this cir-

[a] Untersuchungen über thierische Elektricität. Band 2. Berlin: 1849. 3 Abschnitt, cap. VII. § ix.

[b] The opinion that the molecules of the muscular tube in the condition of rest are endowed with opposite electrical states, and arranged in a peripolar system, appears to be as yet not proved. This condition seems rather to be limited to the nerves. In the latter we certainly discover, according to the investigations of the observer just mentioned, in the state of rest (excitability) an aggregation of such molecules endowed with opposite electrical conditions into a peripolar system, while in nervous excitation the dipolar arrangement or negative variation of the molecules occurs.

[c] *Loc. cit.* Bd. 2, p. 286.

cumstance, as the muscles of frogs killed by other poisons usually lose their irritability before the nervous trunks. Though the reasons are not clearly apparent why Herr Eckhardt[a] denies the force of Bernard's experiment, the existence of irritability independent of the nerves does not follow from the latter.

Herr Kölliker[b] concludes from a series of experiments instituted with curare, that this poison "affects chiefly the terminations of the nerves in the muscles"[c], and that "the nervous trunks resist the poison much longer"[d]. "The same dose (approximatively), which kills the motor ends of the nerves in from five to ten minutes, does not paralyze the tubes of the trunks until after from three and a half to four and a half hours; indeed, even when the circulation, almost undisturbed, constantly brings fresh poison to them, they do not succumb until from one to two hours after their final terminations"[e]. He suspects "that urari reaches the nerves through the blood, and as it is taken up as such into the nervous tubes it produces chemical changes in their active parts (that is, of the axis-cylinders), in consequence of which these become unfitted for the manifestation of their normal molecular movements[f]. According to his view, the arrow poison, if it did not paralyze all the motor nervous fibres in the muscles, should destroy only their final terminations, which are distinguished from the other nervous tubes by delicacy or absence of the neurolemma and more exposed axis-cylinders[g].

Herr Kölliker admits, as we see, the possibility that all intramuscular nerves may not be destroyed by the arrow poison, and he, therefore, considers that the question of muscular irritability is not decided by his experiments just alluded to. Among the conclusions he draws from the latter he says:—"The voluntary muscles continue perfectly excitable, in cases of poisoning with urari, but show a greater tendency to merely local contractions"[h]. Might we not suspect that this greater tendency to merely local contractions depends on the death of a part of the motor nerves contained in the muscular substance, and on the preservation of the rest.

From the experiments instituted with the arrow poison it would only appear that, in consequence of the action of the poison, the motor nervous trunks cease to communicate their stimulus to the muscles. When therefore the muscles, immediately excited, nevertheless contract, it is not proved that the contraction is not produced by excitation of the nerves. There is certainly nothing against the assumption that the motor branches within the muscle are still excitable, and, in this case, respond to the stimulus by shortening the muscular fibres.

Among the physiological investigations of Herr Kölliker, upon

[a] Beiträge zur Anatomie und Physiologie. 1 Heft. Giessen: 1855. Page 47.

[b] Physiologische Untersuchungen über die Wirkung einiger Gifte. Virchow's Archiv für pathologische Anatomie und Physiologie. Band 10, Heft 1 und 2.

[c] *Loc. cit.* page 16. [d] *Loc. cit.* page 53. [e] *Loc. cit*, page 54.

[f] *Loc. cit.* page 71. [g] *Loc. cit.* page 55. [h] *Loc. cit.* page 73.

the effects of some poisons, I think I ought to refer to the behaviour of the muscles towards veratria. In order, if possible, to ascertain something more precisely as to the species and mode of occurrence of muscular paralysis in consequence of this poison, Herr Kölliker poisoned frogs with urari and afterwards with veratria. He found[a] "that in frogs paralyzed with arrow poison a rapid decrease of excitability of the transversely striated muscles, including the heart and a premature rigidity, can be produced." "If we now consider," he continues, "that veratria does not alter the excitability of the nervous trunks; while, on the other hand, it is proved of the arrow poison, that it paralyzes, first of all, the terminations of the nerves within the muscles, it may be inferred as very probable that veratria is a poison which acts directly on the muscular fibres, destroys their power of contraction, and annihilates their vital properties in general, producing as a final result the rapid supervention of rigidity. The experiments with urari and those with veratria are reciprocally complementary, and certainly tend very much to show that the vital processes in the muscles are much less dependent on the nerves than many have been inclined to believe."

Neither do these experiments prove the existence of muscular irritability. Herr Kölliker says indeed[b], "there is no reason to assume that the terminations of the motor nerves within the muscles are circumstanced otherwise than the trunks;" but in reference to this point I might observe, that the contact of the blood containing veratria might paralyze the intra-muscular nerves, while the trunks still retain their conducting power. With this possibility the idea accords very well, that that contact produces a change of aggregation also in the muscular fibres, which destroys their contractility. In this sense the experiments with veratria appear so much the more important, as indicating that the paralysis may be caused as well through want of contractility of the muscular fibres as through cessation of the conducting power of the motor nerves.

The experiment, in consequence of which Herr Eckhardt declares himself an opponent of Haller's doctrine of irritability, is as follows: On the gastrocnemius muscle, separated with its nerve from the body of a frog, are laid the electrodes of a simple chain, the current of which is so modified according to the sensibility of the preparation, that closing and opening it produce a contraction not too strong, but sufficiently evident. The constant stream of a chain consisting of six or seven of Daniel's elements are now passed through a tract of nerve situated in the muscle near the point of entrance of the nerve, and in this manner the paralytic condition is transmitted to the finest ramifications of the nerve within the muscular substance. (The paralyzing stream in the nerve must be ascending.) If we now try again to stimulate the muscle through the proper chain, we shall see, provided the paralyzing chain was sufficiently strong in

[a] *Loc. cit.* Heft iii. page 265. [b] *Loc. cit.* page 270.

relation to the stimulating one, that the contractions do not occur. They reappear immediately when the paralyzing chain is opened.

The dependence of the muscles on the nerves follows also from the fact, established by Alexandrini and the Brothers Weber, that in the embryo the muscles are not formed unless the spinal nerves have been previously developed[a]. The opposite assertion of Herr Vrolik[b] has been refuted[c] by Herr Schroeder van der Kolk[d]. In a case described by Herr Barkow[e] the dependence of the development of the muscular system on the development of the nervous system, is shown in an interesting manner. In this case there were opposed to each other, on the one hand, the osseous and vascular systems, and the viscera which were more perfectly developed; on the other the greater part of the cerebro-spinal nervous system, namely, the brain and spinal marrow, and their nerves, with the exception of the three nerves of higher sense, and the voluntary muscles, of which the development was deficient. The three nerves of higher sense were in their normal condition, and the three corresponding organs presented but little deviation from their usual state. On the contrary, all the other cerebral and spinal nerves were very insignificant, or altogether absent, and all the voluntary muscles were likewise either absent, or consisted only of muscular substance interwoven with tendinous fibres or much fat. The consonance in development between nerves and muscles was decidedly manifested in the complete absence of both phrenic nerves and of the diaphragm itself.

It is established that the muscle contracts when its motor nerve is irritated, but it is by no means proved that such an effect is produced without this cause. Accordingly, the inference appears to be justified, that the vital, non-physical contraction of the muscle is elicited exclusively by excitation of the nerves. The latter is, however, only one factor of the former, and is ineffectual when the muscular fibres have lost their contractility. The latter is peculiarly inherent in the muscle, and is, even if unequally distributed, probably present throughout the whole course of its primitive bundles. These, it is well known, exhibit spots in which the networks surrounding the sarcolemma, and proceeding from the nervous anastomoses, appear to be wanting, and no free, simple, or ramifying nervous terminations are to be found. In the paper read by Herr Fick, at the third sitting of the Physiological Section of the Thirty-second Meeting of German Naturalists and Physicians at Vienna, attention was directed to the fact that the muscular bun-

[a] Compare E. M. Weber on the dependence of the origin of the animal muscles on the animal nerves. Verhandlungen der Gesellschaft der Wissenschaften zu Leipzig, 1849, Heft 3, page 136.

[b] Nederl. Lancet, 1852, page 765.

[c] Verh. der Eerste Kl. van het Nederl. Inst. 1852, page 61.

[d] See Canstatt's Jahresbericht for 1852, Bd. 2, page 19.

[e] Beiträge zur pathologischen Entwickelungsgeschichte, Gratulationsschreiben der medicinischen Facultät zu Breslau. 1854. Breslau, Hirt. page 13.

dles do not contract uniformly in all parts when their motor nerves are acted on galvanically. Perhaps the parts which are behind contraction are those in whose sarcolemma nerves are not to be found.

The contraction of the primitive muscular fibres following the nervous influence depends on the easy mobility and suitable arrangement of their molecules, as well as on their normal state of nutrition; when the latter is altered, the contractility disappears. The lesion of nutrition of the primitive muscular fibres is one element in myopathic paralysis.

From the intimate contact which exists between the muscular fibres and the nerves ramifying on them, a lesion of nutrition of the former must sooner or later be propagated to the latter. It will produce in these chemical and histological changes of the active substances, as coagulation of the albumen, saponification of the fats, breaking up of nuclei, molecular disruption, changes in the state of aggregation in general, and will so deprive the nerves within the muscle of the power of performing their physiological functions (as well as of their electrical properties). If such lesion of nutrition attain the degree at which the conservative influences are overpowered, the nerves decay, and their excitability within the muscle is destroyed. This consecutive lesion of nutrition of the intramuscular nerve is the other element in myopathic paralysis.—*Allgemeine Medicinische Central-Zeitung.* Berlin, May 30, 1857: p. 337.

On a Case of Manifold Neuromas, with a Remarkable Local Tendency to Relapse. By RUD. VIRCHOW.

ON the 4th of May, 1857, I received from Dr. Schmidt, of Bernburg, a considerable number of particles of tumours, in reference to the source of which he sent me the following communication:—

"Enclosed I take the liberty of sending, for your kind examination, some diseased masses, which, early to-day, I extirpated, or, more correctly speaking, enucleated. Their seat was on the lower two-thirds of the flexor side of the forearm. As to the history of these peculiar tumours, it is, in the first place, remarkable, that according to the recollection of the patient, a man of sixty-one years of age, a movable tumour, of the size of a lentil, with natural integumentary coverings, formed thirty-four years ago on the flexor surface of the forearm, not far from the wrist-joint. Its growth was so slow that at the end of twenty years the tumour was about the size of a cherry. About five years ago it had attained the circumference of a middle-sized apple. The swelling, which had previously been free from pain, caused some suffering, on which account Professor Blasius, in 1852, extirpated the tumour. The healing of the wound was tedious. In fifteen months, at midsummer, 1853, a tumour formed anew in the same situation, which in the spring of 1854 had far exceeded the size of the first, was uneven, and had

become excoriated on the surface, giving rise to bleedings. Professor Blasius, therefore, had recourse again to extirpation, which was very difficult, in consequence of the secondary masses having formed firm attachments to the skin, the tendons, and even the periosteum of the radius. After this operation relapse took place very soon,—even in June the new masses were considerable in number and circumference. It was, therefore, necessary this year to have recourse again to extirpation. But scarcely had the wound caused by this operation healed, when the after-products again appeared. The fourth operation was performed by me in October, 1856, when the relation of the tumour to the tendons and periosteum was as before. A portion of the masses could be scooped out with the fingers without the knife.

"The fifth operation was, as has been mentioned, performed to-day. The masses were again seated partly in the areolar tissue, partly among the tendons and muscles, and partly on the periosteum. The operation was very troublesome. It strikes me as remarkable, first, that the disease returns always in the same place; secondly, that the patient has no pain in the tumours; thirdly, that sympathetic swellings have never appeared in the axilla, which would not be absent in actual schirrus."

The masses sent to me consisted of a considerable number of distinct nodules, differing extremely both in size and shape, but exhibiting the greatest similarity in appearance and structure. The entire mass of all, taken together, filled a vessel of six centimetres (2·3622 inches) in height, and about the same in breadth. Some of the smaller nodules, of 1 or 2 centimetres in diameter, were of a more globular shape, while most of the larger ones, some of which measured 3 or 4 centimetres in superficial diameter, and were from 1 to $1\frac{1}{2}$ centimetres in thickness, presented a flatter basis, while the rest of the circumference was, on the whole, semi-globular, but was lobulated with numerous projections of various sizes up to a centimetre in diameter. So far as this lobulated and globular condition extended, the surface was smooth, shining, and covered only with some loosely attached fragments of connective tissue; on the basis, on the contrary, were observed a number of firmly attached striæ of a dense fibrous tissue which, in many places, was decidedly tendinous. In no situation did any special coat exist. The colour appeared both externally and on section to be a bright reddish-grey, with a slight shade of yellow; the consistence was everywhere considerable, the appearance rather translucent. On section a dense, felt-like, fibrous interlacement, whitish and striated on longitudinal section, more uniform, and of a yellowish-red colour on transverse section, was very easily perceived with the naked eye. These fibres, for the most part, radiated in a fanlike form from a point in the outer circumference, situated rather towards the base, and were gradually lost in the homogeneous substance forming the material of the lobes; some indications of lobes were found also in the interior of the nodules. The tumour, on the whole, therefore, closely re-

sembled, on the one hand, the so-called fibroid tumours of the uterus; ou the other, the ordinary form of neuroma (steatoma of the older writers).

The microscopic examination completely supported this analogy. Thus it appeared that the internal structure was in all parts tolerably uniform. A dense fundamental substance, appearing striated on longitudinal section, from which distinct fibres were with difficulty separated, formed proportionally broad bands, ramifying in various directions and again uniting; the intervening spaces were occupied with similarly transversely intersected bands, which on the surface of section exhibited a firm homogeneous appearance. In this fundamental substance lay tolerably dense nuclei, appearing in rows on longitudinal section, separated only by rather slender intervals of substance, of an oblong staff-like form, rather slight, and on transverse section small, roundish, and somewhat granular in appearance. Acetic acid made these nuclei very distinct, and gave the entire section an appearance closely resembling that of smooth muscular parenchyma. However, muscular cells could in no manner be isolated; after separation of the fibres naked nuclei were almost solely to be seen in the fluid.

The tumour in its composition, therefore, completely resembled the formations recently described under the name of fibro-nucleated tumour. In order to establish with more certainty its internal structure, a portion was boiled for some time in a hermetically sealed glass tube, in a Papin's digester, under a pressure of three atmospheres. The fluid so obtained, when filtered, afforded with alum and tannic acid copious precipitates, soluble neither in an excess of these reagents nor in acetic acid. Acetic acid caused a strong turbidity, becoming somewhat lighter when the acid was added in excess, in which ferrocyanide of potassium produced a copious precipitate. Basic and neutral acetates of lead gave rise to decided turbidity, which almost disappeared on the addition of acetic acid. Hydrochloric acid caused a turbidity almost entirely soluble in an excess of the acid, and completely disappearing on saturation with ammonia. Corrosive sublimate produced a strong turbidity.

The residual more solid matter was very easily divided, and on microscopic examination was seen to consist entirely of fine spindle-shaped cells, in which the nuclei above mentioned were contained. When the mass was first soaked in an ammoniacal solution of carmine, and then super-saturated with acetic acid, the elements became particularly distinct, inasmuch as the cells appeared of a pale-reddish, and the nuclei of a dark-red colour. There could, therefore, be no doubt that the tumour consisted essentially of connective tissue, in which the cell-elements were most intimately connected with the scanty fundamental substance, so that in the ordinary mode of preparation only naked nuclei could be found.

Formations of this kind have hitherto occurred to me only on the nerves, and indeed most usually in larger either ganglion-like or completely tuberculated tumours, most frequently in the brachial

plexus. Little as such an idea was probable in the present case, on account of the size and frequent relapses of the tumour, the circumstance put forward by Dr. Schmidt, that notwithstanding the long duration of the affection, the axillæ had always remained free, indicates the eminently local nature of the disease. I, therefore, subjected the individual nodules with a view to this point to a more special examination, which showed that to several of them nervous filaments, very evident even to the naked eye, were attached, and were inserted exactly in the spot whence the fibrous filaments radiated into the interior of the tumour. To one of the larger nodules was attached a portion of nervous filament, recognised with certainty as such under the microscope, 12 centimetres in length, and about half a millimetre in thickness, which penetrated obliquely into the tumour. Internally I nowhere succeeded in discovering any nervous fibres; posteriorly, on the contrary, the nerves appeared to have undergone no essential change.

If, therefore, it follows with the greatest probability that the tumour in question was a manifold neuroma, characterized by an unusual tendency to relapse, the investigation at the same time again refutes the existence of the fibro-nuclear tumour so frequently spoken of of late, as it demonstrates that the apparently free nuclei were in the present case also contained in the interior of cellular elements of areolar tissue.—*Virchow's Archiv*, Bd. xii., Heft 1, 1857, page 114.

Rare Case of Fracture of the Sternum occurring during Labour; with Observations. By Drs. Francesco Lucchetti and Giuseppe Posta.

Two French surgeons, Comte and Martin, in the Classical Dictionary of Medicine and Surgery, Venice[a], relate a case of transverse fracture of the sternum, which occurred in the last moments of labour in the person of Madame Pacton, aged 35, pregnant for the first time, and who died on the fourteenth day of childbed. We have had the opportunity of witnessing, though with better fortune than the French surgeons, another case of this nature which terminated in recovery, and which we publish, both on account of its singularity, and as a warning to nursetenders to be more careful in preparing the bed for their patients, as we believe that in the present instance the bad system adopted by the midwife contributed much to produce the accident in question.

Case.—Signora Maria Grossi, of Roccagulielma, in the district of Gaeta, aged 25, of a sanguineo-nervous temperament, well formed both as to the pelvis and her person generally, having arrived at the full term of her first pregnancy, began, on the morning of the first day of the present year, 1857, to feel the pains of labour, which increased gradually in frequency and intensity, until at 3 o'clock

[a] Vol. xiv. p. 70.

in the afternoon the period of expulsion had arrived. The patient, uniting her voluntary efforts to the spontaneous and natural contractions of the uterus and of the abdominal muscles, suddenly perceived a crash and intense pain in the antero-superior region of the chest, and in a few moments gave birth to a living female child.

The expulsion of the placenta was easy, and unattended with inconvenience; however, after the labour the pain in the same region increased so much that the patient's relatives were obliged to apply for medical aid.

Although fracture of the sternum is most easily diagnosed, manifesting itself, in addition to the phenomena of disturbed respiration, by signs evident to the touch, the eye, and the ear, the accident was considered to be one of simple muscular strain, was neglected for a week, and the patient was not subjected to treatment.

The symptoms of the thoracic lesion becoming threatening, Dr. Lucchetti was called in, who, arriving on the evening of the seventh day after delivery, found the patient sitting up in bed, unable to lie down either on her side or back, nor could she, without suffering, raise her arms; her face was turgid and almost livid, her tongue was red, and somewhat loaded. There was very high fever; the pulse was hard, full, frequent, and occasionally dicrotous; there was urgent thirst; the bowels were constipated; the secretion of milk was regular. Respiration was difficult and unequal, and was attended with so much pain, and such a sense of weight and oppression, as to lead to the apprehension that suffocation was imminent. The patient was tormented with a troublesome and frequent cough, every return of which renewed the sense of crashing and the intense pain in the chest, a little yellowish mucus being with difficulty expectorated. The sweat of agony appeared at uncertain intervals upon the forehead and neck, but the skin of the rest of the body was unusually dry. The seat of pain, which was precisely the middle of the upper part of the sternum, presented an elevation caused by the fracture of that part of the bone, the superior broken portion projecting, while the inferior was depressed. The shocks of the cough moved the bony fragments, and the crepitation, which is the surest indication of fracture, was audible to the bystanders; hence it was evident that the sternum had been fractured transversely in its upper part.

In the evening an emulsion of gum-arabic with syrup of digitalis was prescribed, and several leeches were applied to the affected part. These means were attended with slight and transient relief; but great advantage was obtained during the night by a copious bleeding from the arm, as, in consequence of the diminution of the cough, and the moderation of the more troublesome symptoms produced thereby, the patient was able to enjoy a few hours' sleep.

The following day Surgeon Posta being called into consultation, also recognised the fracture, which had not yet been reduced; this

was now done with the assistance of Dr. Lucchetti and a young student in medicine, Andrea Winckler, after which a suitable bandage was applied, &c.

At the end of thirty-five days we found Signora Grossi cured, a slight elevation alone remaining at the seat of fracture, produced by a strong and consolidated callus: she is now able to attend to her domestic duties.

Observations.—If traumatic fracture of the sternum is a rare case, it is immeasurably rare to see such an accident follow the efforts of parturition. Traumatic fracture of the sternum is the effect of the immediate action of bodies falling on this bone, breaking it, and consequently causing severe contusions of the soft parts, and usually profound disturbance of the subjacent thoracic viscera. All surgical observers have seen in fractures of the sternum extensive effusions in the mediastinum, the lungs, and the heart.

Fracture of the sternum, from whatever cause, is easily recognised, in consequence of the bone being wide, flat, tolerably long [and superficial]; its fragments are felt on very slight pressure, and the well-marked crepitus renders it impossible to doubt the nature of the accident.

In fracture of the sternum respiration is painful and difficult; troublesome cough, oppression of the chest, sanguineous expectoration, palpitation of the heart, and sometimes emphysema, are present. The patients are greatly distressed, nor can they lie on the back without producing signs of impending suffocation. Simple fractures of the sternum, such as those occurring during the pains of labour, are easily treated; the fracture being reduced, immediate local relief is obtained by covering the fractured portions with pledgets dipped in vegito-water. A two-tailed serrated bandage crossed, leaving the mammæ free, is sufficient to retain the parts *in situ.* In the case of our patient the secretion of milk continued normal up to the period of cure.

The most advantageous position in cases of fractured sternum is to remain seated in bed, the head and the thorax being elevated, and the thighs flexed, so as to avoid the inconvenient tension of the abdominal muscles, which often gives rise to displacement of the portions of bone.

Absolute rest must be enjoined, much speaking is to be prohibited, and such efforts as coughing or sneezing must be avoided as much as possible. Three cushions, one at the back and two at the sides of the thorax, will be advantageous in maintaining the patient in the proper position.

Lastly, it may be asked, how can fracture of the sternum occur during the parturient efforts?—a question, the answer to which ought to be interesting, not only to surgeons, but to all obstetricians, and especially to the numerous midwives, who are too indolent, and superstitiously place their patients in strange, disadvantageous, and injurious positions.

It cannot be denied, that during pregnancy the size of the

abdomen enormously distends all the tissues of the latter, and the muscles in general acquire a high degree of tension, as do all the abdominal muscles and those attached to the sternum; this anatomical condition may therefore become a concurrent cause of fracture of the bone in question. In fact, scarcely do the expulsive uterine efforts commence, when all the muscles are put upon the stretch, and the sternum is drawn a little downwards; consequently, if, instead of giving to the patient a position calculated rather to moderate this tension, she be placed in another likely to augment the downward traction of the bone, fracture of the latter, if it occurs, may be attributed to the faulty position in which the woman is placed.

Signora Grossi would not have suffered fracture of the sternum if the midwife had not foolishly placed her on the ground, or, at best, upon a mattress; and had she not, when the moment of parturition arrived, been raised upon her hands, made an effort with her arms, and counter-extension with the thoracic muscles, the abdominal muscles at the same time drawing the sternum forcibly downwards; the bone was thus immediately acted on by two forces, the one thoracic and superior, the other abdominal and inferior; it consequently gave way in its upper third, and a fracture was produced, which might have caused death. The only means of preventing the recurrence of such accidents is to warn the midwives, that patients ought to be delivered in bed, and, still better, in the obstetric bed; but when this is not to be had, and if it is wished at all risks to deliver in those wretched chairs, against which every surgeon ought to exclaim, it is necessary that the midwives should at least know, that in any position the legs ought to be in a state of relaxation on the thighs, and that the thorax of the patient should be a little elevated and supported by a cushion. Without such sound principles, parturient women, especially in the country, will be in one or other mode perpetually sacrificed.—*Bulletino delle Scienze Mediche di Bologna*, April 1857, p. 255.

Physiological and Toxicological Investigations concerning Curare. By PROFESSOR E. PELIKAN, of St. Petersburgh.

THROUGH the intervention of my colleagues, Drs. Brandt and Zablotsky, I obtained, last spring, from MM. Claude Bernard and Lecomte, of Paris, an American poison, known under the name of curare, or woorara. The results of the experiments instituted by me on this poison differ in some measure from those of my predecessors, as will appear from the following:—

1. Brocklesby and Fontana[a] in the last century, and Emmer[b] in 1817, considered it to be ascertained that the woorara, or ticunas, which probably is identical with the curare, given internally to

[a] Felix Fontana, Abhandlung über das Viperngift, etc. Berlin: 1787, s. 289.
[b] Meckel's Deutsches Archiv für Physiologie, 1818, iv. bd., 2 heft, s. 177.

various birds, produced the same effect as when it was absorbed through the subcutaneous areolar tissue, or was introduced into a vein, with this difference only, that the poison then worked more slowly, and required to be employed in larger quantity. This fact was subsequently confirmed by Vulpian and Cogswell upon various animals. I have performed my experiments on five rabbits, two of which had been long kept without food. To each a solution of four and a half grains of curare, in half a drachm of water, was given. In those which had been previously kept without food death followed immediately; in one, after three, in the second after twelve minutes, with all the characteristic symptoms usually produced by this poison; in the former, all the symptoms of poisoning manifested themselves at the expiration of one and a half; in the second, at the end of seven minutes. The poison was introduced by means of a tube smeared with olive-oil. On dissection, the blood in all the organs was found to be fluid, and darker than usual; the stomach contained but little of the solution employed, and some remains of food. Neither the mucous membrane of the mouth, nor that of the œsophagus and stomach, as far as the pylorus, exhibited any lesion of continuity (excoriations, wounds, ulcers). Two other rabbits, which had previously been well fed, and to which the same quantity of curare had been administered in the same manner, presented totally different phenomena. In one, great weakness in the anterior and posterior extremities, tottering, &c., manifested itself after the lapse of forty-five minutes; but in two and a half hours after the poisoning the animal recovered, and on the second and third day appeared to be well. In the second, the effect of the poison showed itself in thirty-five minutes, and death ensued in two minutes after; general weakness in the limbs and hurried respiration were the only symptoms. The mucous membrane of the digestive canal had the same appearance as in the two cases above mentioned, except that the stomach was distended with a considerable quantity of green and mealy chyme. The fifth rabbit, finally, which was tolerably well fed, got a solution of a grain of curare in half a drachm of water, but even in some hours after the experiment presented nothing abnormal, and continued well also on the following day.

These experiments justify me in drawing the conclusion that curare is absorbed by the gastric mucous membrane; and that if Bernard and Pelouze maintain that this poison, taken internally, produces no effect whatever, they do so because they probably made use of very small doses, and did not take into account the state of the stomach and other conditions, which so often modify the action of poisons. Their experiments, published in their Memoir[a], establishing the non-absorption of curare through the mucous membranes, separated from the body of an animal, are consequently of little importance. It has long been known that narcotic poisons,

[a] Comptes Rendus, October, 1850.

brought directly into the circulating system, act much more quickly and more powerfully than when they are immediately introduced into the digestive canal. In this respect I must conclude from my experiments that the alcoholic extract of nux vomica is precisely analogous to the curare. One-sixth of a grain of the former, placed under the skin of rabbits, produced tetanus, and death on one occasion after five, on another after seven, but often after nine minutes; while ten grains, introduced into the stomach, likewise, it is true, produced tetanus, with all the characteristic symptoms of poisoning by strychnia, and finally death; but on one occasion not until after thirty minutes, on another not until after the lapse of an hour. One grain of this extract, passed into the stomach of a large dog, remained without effect; five grains introduced into the stomach of another large dog, after the lapse of thirty minutes produced tetanus, which returned four times: the latter dog recovered in four hours, continuing weak for some time; two days sufficed, however, for his perfect restoration. A week subsequently, one grain of this extract, placed in the subcutaneous areolar tissue of the same dog, caused slight convulsions; recovery was rapid. A fortnight later, a grain of curare introduced under the skin, gave rise merely to a slight weakness of the extremities; recovery took place in an hour and a half. A grain of extract of nux vomica was placed under the skin of another dog of middle size; it acted in seven minutes, and produced tetanus and death at the end of twenty-five minutes. One grain of curare, introduced into the subcutaneous areolar tissue of a dog of the same size, and well fed, exhibited its effect in seven and a half minutes, with all the characteristic symptoms of this poison; death ensued in ten minutes.

Similar results were afforded by experiments frequently repeated on other animals, in which I introduced extract of nux vomica, both under the skin and into the stomach.

2. My experiments instituted on animals corroborate the opinion of M. Bernard, that curare has a paralyzing effect on the motor nerves; in this respect, however, the direction of its action is diametrically opposed to that of strychnia. But I must observe, that if the nerves be irritated immediately after death, the contractions of the corresponding muscles are not always absent. These contractions M. Bernard completely denies. I have seen muscular contractions ensue during some minutes on puncturing or cutting the sciatic nerve. Thus the stimulated nerves of a horse, into one of whose jugular veins a solution of nearly four grains of curare was injected, and in which death ensued in nine minutes, were capable of producing contractions of the muscles ten minutes after death. On one occasion I produced muscular contractions fifteen minutes after death in a rabbit, under whose skin I had introduced ten grains of curare, mixed with an equal quantity of tannin, where the first effect took place in four and a half, and death ensued in ten minutes. In another experiment the muscles contracted at the end of upwards of five minutes after death in a rabbit, poisoned by a mixture of a

grain of curare, one-third of a grain of iodine, and one grain of iodide of potassium; death in this instance ensued in ten minutes. Although I succeeded in producing such contractions, I am inclined to consider them as exceptions to the general rule established by Bernard,—exceptions due to some unknown individuality of the animals, or to other causes as yet unascertained.

Bernard, and more lately Kölliker, infer from their experiments that curare produces absolutely no effect on a limb, the circulation in which does not communicate with the arterial system of the rest of the organism. They hence concluded that the paralyzing agent was transmitted from the periphery to the centre. This mode of action of curare is, as the following experiments distinctly prove, opposed to that of strychnia: in dogs and rabbits killed by poisoning with strychnia, and in which the sciatic nerve had previously been divided, I produced muscular contractions by irritating these nerves, even in twenty-five minutes after the undivided nerve had ceased to cause contractions. This shows that the paralyzing agent is transmitted from the centre to the periphery, and that the division of the nerves keeps up their irritability in animals poisoned with strychnia. In order to convince myself that the phenomena just described proceeded from strychnia, I instituted experiments on animals previously hung or killed with conia, prussic acid, or other poisons. If the duration of the muscular contractions, produced by irritation of the nerve previously divided, was occasionally different from the duration of the contraction which followed irritation of the uninjured nerves, the difference never amounted to more than one or two minutes. But when curare was employed instead of strychnia, the phenomena were exactly the reverse. In dogs and rabbits, whose sciatic nerve was merely divided on one side, the contractions ceased simultaneously on both sides, usually in from one minute to half a minute after death. The experiments quoted, therefore, confirm the opinion of Bernard and Kölliker, that the direction of the paralyzing agent created by curare is entirely opposed to the direction usually observed in paralysis. Phenomena perfectly different present themselves when the cervical portion of the sympathetic nerve on one side is divided. Thus in a rabbit in which this operation was performed previously to poisoning, I observed towards the end of the action a dilatation of the pupil and the protrusion of the eyeball from the socket; although this phenomenon manifests itself simultaneously in both eyes, it is less developed on the divided than on the uninjured side, and even some time after death a difference may be observed in the diameters of the two pupils. This takes place also through the action of strychnia: the pupil is much more powerfully dilated during the tetanus on the uninjured side than on that where the nerve has been divided.

3. Curarin, prepared by my colleague, Hr. Trapp, in the method described by MM. Boussingault and Roulin, with the simple exception that he made use also of the watery extract of this poison, was introduced in the shape of powder, to the amount of three-fourths

of a grain, under the skin of a young and rather lean rabbit. In thirteen minutes symptoms similar to those observed after the employment of curare set in; death ensued in forty minutes. The phenomena of the muscular contractions, produced by irritation of the nerves, were also identical with those caused by curare. In consequence of this fact we must doubt the assumption of those who consider that the aboriginal inhabitants of America prepared curare from various species of lianas, with an addition of the poison of serpents.

I may further add that a boiling heat does not destroy the poisonous action of curare.

4. It is difficult to find an antidote to curare when once, either injected into the veins, introduced into the stomach, or absorbed through the subcutaneous areolar tissue, it has arrived in the animal economy. Curare mixed with tannin, or with a solution of iodine in water containing iodide of potassium, also induces death. I have observed that the administration of even one grain of curare, mixed with an equal quantity of tannin, or with one-third of a grain of iodine, was followed by death, with all the characteristic symptoms of poisoning by curare; and although the muscular contractions produced by the irritation of the nerves lasted longer than when pure curare was introduced into the animal economy, I could not decide whether this proceeded from the antidote (tannin or iodine), or whether the individuality of the animals caused this difference in the phenomena.

Although after the application of a precipitate obtained by mixing a solution of tannin with a watery solution of curare (tannate of curarin), under the skin of rabbits, I could perceive no poisoning, yet antidotes in general, after curare has once produced its action, are no longer in a condition to alter the latter; even strychnia itself produces no effect when the action of curare has once been manifested.

In like manner curare cannot destroy the effect of strychnia, when the latter has begun to make itself known. After the employment of a strychnia salt with curare, I observed no compound action; but, generally speaking, the action of one predominated at one time, and that of the other at another, and this appeared to depend, first, upon the relative quantity, and secondly, upon the form in which the poison was administered; thus the poison most soluble in water, and consequently most easily absorbed, exhibited its action first. I have never seen the action of strychnia remove that of curare, and *vice versâ*, when these poisons were employed at the same time, but only in sufficient quantity, so that the views of Morgan, Harley, and others, may find their explanation in the insufficiency of the doses used by them; consequently, that curare and strychnia should mutually react on one another as antidotes in cases of poisoning, cannot, according to my experience, be admitted.

5. The presence of curare may be discovered by the reaction of curarin. The best reagents for the latter are the same as for

strychnia; a mixture of sulphuric acid with chromate of potash, or with ferrocyanide of potassium. The smallest quantity of curarin, dissolved in a drop of water, with the addition of a little chromate of potash, or ferrocyanide of potassium, and mixed with a drop of concentrated sulphuric acid, diluted with an equal part of distilled water, produces a brown coloration, which immediately passes into a violet-red, striking to the eye. The red colour is tolerably stable, and is not readily altered, even when the mixture is slightly warmed. Hyperoxide of lead, combined with concentrated sulphuric acid, and also treatment with galvanism, are likewise good reagents for curarin. The former produces a violet colour; the latter develops a red colour at the positive pole of the galvanic pile. But if the quantity of curare is not sufficient to enable the experimenter to obtain curarin from it, he may act on a solution of curare, by which means, instead of a beautiful red, he will obtain a dirty violet.

CONCLUSIONS.

1. Curare, like the alcoholic extract of nux vomica, always produces a definite effect when it is passed into the digestive tube; but its action is then weaker, under equal conditions of the animal, than when it is introduced into a vein, or into the subcutaneous areolar tissue.

2. We have no reason to ascribe to curare a particular nature or special chemical composition (for example, the presence of serpents' poison), a belief in which led both some older (Condamini, Pau, Bankrost) and some more modern experimenters (Bernard, Pelouze, Alvaro-Reynoso, and others) to adopt the opinion, that the action of curare was of a quite peculiar kind, and that curare is not absorbed by the gastric mucous membrane.

3. Curare, as a narcotic poison, is subject to the same laws as alcoholic extract of nux vomica and other narcotic poisons; that is, the leaner any animal is, the longer it has fasted, and the more empty its stomach is, so much the stronger, more rapid, and more distinct will be the effect of the curare; opposite conditions are capable merely of weakening its action.

4. The muscular contraction produced during irritation of the nerves does not, as Bernard maintains, always cease immediately after death.

5. Bernard's statement, on the contrary, that the paralyzing action exercised by curare on the muscular nerves, and finally also on the nervous trunks, takes a direction quite opposite to the ordinary course, is capable of being completely established by experiments on animals poisoned with curare, in which the sciatic nerve was previously divided.

6. On dividing the cervical portion of the sympathetic nerve, curare seems to act more strongly on the pupil of the eye of the uninjured side than on that of the side on which the nerve has been divided.

7. The action of curarin is perfectly analogous to that of cu-

rare, and we have no reason to assume in the latter the presence of any unknown substance (poison of serpents, &c.).

8. Neither tannin, iodine, nor strychnia is capable of destroying the action of curare when it has been employed in sufficient quantity; its effect is capable merely of apparent modification.

9. Neither curare nor strychnia, administered in poisonous quantity, is capable of destroying the action of the other; and the drug, which is more easily absorbed, usually exhibits its action earlier.

10. In order to discover the presence of curare, a similar reagent must be employed for curarin as for strychnia, with the single difference, that the colouring produced by sulphuric acid with chromate of potash, ferrocyanide of potassium, or hyperoxide of lead, is more stable than that developed in the reaction on salts of strychnia: the reaction of galvanism on curarin is also the same as on strychnia.

APPENDIX.

At the time when I undertook the investigations on curare, I had before me only an extract from Professor Kölliker's treatise on this subject, which extract appeared in the November Number of the "Comptes Rendus des Séances," &c., for the past year. It was not until very lately that I obtained this distinguished observer's essay in the original, published in the tenth volume of Virchow's Archiv for September and October of last year. In this extended treatise, which contains reports of very many interesting experiments on different animals, the author describes his investigations with reference to the internal use of curare. The results at which he arrived are similar to mine. But he, as well as the other experimenters, omitted to examine the action of curarin (the alkaloid of curare), and in this manner to solve one of the most essential toxicological questions with respect to this mysterious poison, whereby my investigations are distinguished from those of Kölliker and Bernard.—*Virchow's Archiv*, Band xi., Heft 5, 1857; p. 401.

On Effusions of Blood in the Tissue of the Valves of the Heart. By Professor H. Luschka, of Tübingen.

Since I have succeeded in demonstrating by injection the existence of blood-vessels, not only in the tricuspid, but also in the semilunar valves of the heart (see "Archiv für pathologische Anatomie," 1852, p. 182; and "Archiv für phys. Heilkunde," 1856, p. 536); the influence of these vessels on changes of texture in the valvular apparatus cannot be disputed. Although we have hitherto wanted anatomical demonstration of the existence of blood-vessels, especially in the semilunar valves, certain phenomena in inflammatory processes have been attributed to them, probably after the analogy of the alterations in endocarditis. As I shall on another occasion describe the lesions of nutrition of the valvular tissue which occur in con-

sequence of partial or total destruction of its blood-vessels, I shall direct my attention at present, first of all, only to the little effusions which their rupture may produce in it between the laminæ of the valves.

In the adult, ecchymoses in the tissue of the valves of the heart occur comparatively rarely. I have as yet observed them in but a few instances. In a man, aged 18, who had destroyed himself by hanging, I found in the anterior point of the tricuspid, adjoining its free edge, a small, diffused portion of blood, of irregular form, the length and breadth of which scarcely amounted to three millimetres (·11811 inch). By pricking the inner lamella of the valve I was able to obtain a quantity of blood sufficient for microscopic examination, containing the normal morphic constituents of that fluid in very great number, and still quite unchanged. In the same body I discovered very small effusions of blood in the tissue of the anterior semilunar valve of the aorta. It was in the form of distinct, very delicate striæ, running, with respect to the valves, in a vertical direction, their arrangement being probably determined by the deposition of the blood between perpendicularly placed fasciculi of fibres. In the body of a man who died of sanguineous apoplexy, I saw, adjoining the swollen edge of the left semilunar valve of the aorta, an almost circular, sharply defined ecchymosis, of the size of a grain of millet, the form of which was undoubtedly due to the effusion of the blood in roundish interspaces produced in the neighbourhood of that edge by the tissue proceeding from the annulus arteriosus. According to a communication made to me, Dr. Reuss, of Stuttgart, found in a person who died on the eleventh day of puerperal fever, with small subpleural sanguineous effusions, an ecchymosis resembling a grain of gunpowder in one of the semilunar valves of the pulmonary artery. I found a striated effusion of blood in one of the stronger tendinous fibres of the mitral valve in a woman dead of pneumonia.

Effusions of blood in the tissue of the valves of the heart occur in infants incomparably more frequently than at the other periods of life, indeed, remarkably often, and they are especially frequently met with in the tricuspid valves.

From investigations I instituted on hearts which Herr Elsässer, of Stuttgart, had the goodness to send me, it appeared that the effusions of blood in infants presented very remarkable peculiarities in situation, form, and size. They almost always adjoin the free edge both of the mitral and of the tricuspid valve, more towards the inner than the outer lamina of the point of the valve in question. It is here also accordingly that they mostly project more or less distinctly above the level of the rest of the surface, and, moreover, can be seen from the outer side of the point of the valve.

The little points of blood usually possess a roundish, often completely spherical shape, with a very sharply defined contour, and appear on valves carefully washed with water like red granules sprinkled in their tissue. Their colour changes so that they appear partly yellowish-red, partly blackish-red, and sometimes even black.

The extent of these definitely bounded effusions of blood likewise offers some variety. The smallest which have as yet come under my own observation were only 0·28 of a millimetre (·0110236 inch) in breadth, while the largest did not exceed a grain of millet in size, but most were equal in magnitude to a very small poppy-seed. If some of the larger of such ecchymoses are carefully pricked with a cataract needle, a minute drop of blood makes its appearance; in the smallest we can convince ourselves of the discharge of blood and of its quality only by opening the ecchymoses under the microscope.

The number of ecchymoses which sometimes occur in the auriculo-ventricular valves is very variable. Rarely is there but a single effusion. There are usually several, from three to four or six, not, however, uniformly distributed over the auriculo-ventricular apparatus, but unequally scattered about their points. The rule is, that they lie quite isolated; still, some are occasionally met lying so near one another as to present a certain miniature resemblance to a segment of the surface of a raspberry.

The determining cause of the form and arrangement of these effusions of blood is easily understood from the more accurate knowledge of the condition of the free edge of the auriculo-ventricular valves of new born-children, contributed by Albini ("Wochenblatt der Zeitschrift der Aerzte zu Wien," 1856, p. 405). In that situation are normally found, towards the inner side of the edge, small, roundish, purse-like projections of the inner lamina of the valve, forming little nodules filled with a soft, almost gelatinous matter, the constituents of which are recognisable as corpuscles of connective tissue, of all possible forms and modes of combination, as well as amorphous connective substance.

These nodules, while in life they are, as may be seen in freshly killed animals, colourless, are found in most dead bodies of children, more or less strongly tinged with red. The effusions of blood produced in the tissue of the valves itself, and during life, which we have been considering, are, however, to be distinguished from this imbibition as a cadaveric phenomenon. The former appear to have been quite unknown to Albini, whether he overlooked them, or, after his mode, considered them to be examples of imbibition. Independently of the fact that in an actual ecchymosis blood in its integrity can be procured from the valvular tissue, such an explanation would not be satisfactory in the case in which pale, dark-red, or black nodules occur near one another, as no reason can be discovered why all nodules under like circumstances of structure and external appearance should not exhibit a similar colour.

The effusion of blood into the interior of these nodules, however produced, exhibits so far a valuable condition, inasmuch as sometimes, with displacement of the normal tissue, almost the whole nodule is filled, and so the effusion assumes its form and size, while sometimes only a smaller section of the nodule is occupied, and then it is, of course, smaller, and does not always present the form of a nodule.

According to the period of its existence, both the mode of circumscription and the contents of the speck of blood vary, Most frequently we find the blood, as it were, encased in an envelope, which without any sharply defined boundary is continuous with the neighbouring parts. It consists, in short, of nothing else than corpuscles of connective tissue compressed by the effusion of blood, which in course of time so accumulate around the ecchymosis that they seem to form a concentrically striated capsule around it.

The contents of the ecchymoses do not always show, and this is a further proof of their occurrence in life, and of their various duration, exactly the same constituents. In very recent effusions we can discover only blood corpuscles and some fragments of tissue. In the yellowish-red coloured ecchymoses we never fail to find amber-yellow pigment molecules, blood corpuscles, and collections of fat granules in process of decomposition; in the black-coloured, probably older species, which, however, are only rarely observed, black granular pigment is undoubtedly found in greater quantity.

If what I ascertained some years ago ("Archiv für pathologische Anatomie," 1852, p. 182) be borne in mind, namely, that very many minute bloodvessels pass from the papillary muscles through the chordæ tendineæ into the tissue of the free edge of the valves, and if it be recollected how very soft the substance of this tissue is as far as it enters into the formation of the nodules, it will be easily understood why sanguineous effusions should be especially frequent in the latter.

In the semilunar valves in infants, ecchymoses are only rarely found; in other respects the latter present similar conditions of form and size to those occurring in the auriculo-ventricular valves. In the calf I very recently found a comparatively large speck on the anterior semilunar valve of the pulmonary artery, corresponding in extent to an ordinary lentil, and yielding, when pinched, a drop of fluid, dark blood. The commonly roundish form of the ecchymoses in the semilunar valves also is directly attributed to the blood being effused in roundish interspaces belonging to the tissue found between the two laminæ of the valves.

I have obtained through Dr. Reuss, very valuable contributions as to the statistics of valvular ecchymoses in infants.

In 165 dissections these occurred 41 times, and as follows :— 13 times in the tricuspid valve; 8 times in the mitral; 17 times in the tricuspid and mitral valves together; twice in the tricuspid, mitral, and semilunar valves of the pulmonary artery together; once in the mitral valve and the valves of the pulmonary artery together.

These 165 dissections were those of 128 children who had been born alive, and of 37 still-born children. The ecchymoses were found in the tissue of the valves of the heart in 31 of the children who had been born alive, and in 10 of the still-born.

According to a Report by Elsässer, on the facts observed in the Lying-in Institution of Catherine's Hospital, in 1844 ("Medic. Cor-

respondenzblatt," Bd. xiv., p. 297), extravasations of blood were found in the tissue of the mitral and tricuspid valves in more than half the dissections of children who died before the twenty-third day after birth.

I shall hold over to another opportunity the consideration of some points of casual importance, such as the influence of these effusions of blood upon subsequent alterations of the valves, and shall content myself on the present occasion with having directed attention to the subject.—*Virchow's Archiv für pathologische Anatomie und Physiologie und für klinische Medicin*, Bd. xi. Heft 2, 1857, p. 144.

On a Case of two Lumbricoid Worms which had penetrated during life into the Liver, and were demonstrated by PROFESSOR GIORGIO PELLIZZARI *to his Pupils in the School of Pathological Anatomy of Florence.* Read before the Florentine Medico-Physical Society on the 3rd May, 1857. By Dr. RAFFAELLO MATTEI, Assistant to the Professor.

THOSE who have engaged in the study of lumbricoid worms have diligently traced the several emigrations by which these parasites proceed through the natural passages of the system to a distance from their original seat. Thus writers speak of lumbricoid ascarides having reached the cæcal appendix, the stomach, the œsophagus, the pharynx, the larynx, the trachea, the bronchi, the Eustachian tubes, the nostrils, and even the frontal sinuses. They likewise quote examples of lumbricoid worms having been found in the pancreatic and biliary ducts, and in the liver. The instances, however, of lumbricoid ascarides having penetrated into the liver through the natural passages are so rare, that they are probably comprised in the following summary. Laennec, in examining the dead body of a child, whose stomach contained a great number of lumbricoid worms, observed that the tissue of the liver was eroded in various points by worms of the same species[a]. Tonnelé found in a liver three abscesses communicating with one another; in one of which a large lumbricoid worm lay coiled up[b]. Guersant mentions two lumbricoid ascarides, which, passing through the hepatic duct, had insinuated themselves into the biliary ducts[c]. W. B. Joy speaks of having seen lumbricoid worms obstruct the biliary ducts of the liver[d]. Andral narrates, in his Pathological Anatomy, that Paul Guersant showed him a liver corroded in several directions by ascarides, which seemed to have introduced themselves through the ductus choledochus[e]. Cruveilhier, in the liver of a woman who had died of latent pneumonia, found five lumbricoid ascarides, two of which filled the prime divisions of the hepatic canal, while others occupied minor subdivi-

[a] Dictionnaire des Sciences Médicales, tome ii. page 344.
[b] Quoted by Angelo Dubini. [c] Diction. de Méd. Art. Vers. int., page 244.
[d] Enciclopedia della Med. Prat. tradotta dal Michelotti. Art. Vermi.
[e] Tome ii. page 181.

sions of the same[a]. Did I refer to the writings of the ancients, I might increase the number of cases of lumbricoid ascarides found in the liver, if they were reliable on this point. The ancients had not correct ideas concerning the fibrin, which, separating from the other elements of the blood, becomes coagulated, and the various forms which this may assume were often considered by them as so many distinct species of worms. Hence those descriptions of worms, or other animals of higher order, sometimes analogous to known beings, at others of most strange and unknown forms, found not only in the liver, but also in other viscera, and especially in the cerebral sinuses, the vessels, and the heart. Gaspare Bauino, for example, assisting at the opening of a dead body, performed by Emilio Campolongo, Professor at Pavia, saw many worms of a certain length in the intestinal branches of the vena portæ, and in those of the liver itself[b]. The simple statement of the fact shows how these two distinguished men were deceived, mistaking fibrinous coagula for worms. Similar errors, which were extremely common before the time of Morgagni, were afterwards of rare occurrence, but did not altogether cease, as even in our own day they are occasionally repeated. But although the authority of writers diminishes in proportion as time separates them from ourselves, I cannot refrain from quoting some words of Sennertus:—"Vierus," he says, "writes that his son Galen found in the dead body of a dropsical girl two worms, a span long, one of which entered the biliary duct of the duodenum, and occupied it; the other was situated in the convexity of the liver, its head being in contact with the investing membrane of the viscus"[c]. This fact, not recorded by modern writers, is worthy of mention, because the worm which penetrated into the orifice of the ductus choledochus leads us from its situation to infer its species, and, as it were, points out the route the other must have traversed to reach the convex surface of the right lobe of the liver.

These are pretty nearly the facts which science possesses relative to the penetration of lumbricoid worms into the liver through the biliary passages. Therefore it will perhaps not be wholly useless that I shall add another which I have had an opportunity of observing in the School of Pathological Anatomy. The importance of the case I am about to describe is not, however, limited to this; for I hope to show that it may have in itself sufficient value to solve a

[a] Diction. de Méd. et Chir. prat., Art. Entoz, page 340. The Vice-President of the Medico-Physical Society, Dr. Barellai, at the same meeting read a note from Dr. Tenderini, of Carrara, in which this physician said that in dissecting, in 1852, the body of a woman, who had died in consequence of a wound on the forehead, attended with fracture of the frontal bone, and followed by inflammation and suppuration of the brain, he met in one of the biliary ducts of the liver a lumbricoid ascaris of thirteen centimetres (a little more than five inches) in length. Dr. Tenderini stated, moreover, that the liver was somewhat increased in size, and was softened throughout, and that the visceral peritoneum, and especially that of the small intestines, was inflamed.

[b] Sennerti Opera Omnia, lib. iii. part vi. sec. i. cap. vi.

[c] *Op. cit., loc. cit.*

question agitated in science. In this second point of view it will deserve, if I am not mistaken, to be considered by you, and thus my communication will fortunately attract that attention which I could not have hoped otherwise to procure for it.

I shall first speak of the disease which caused the death of the individual in whose liver we found the lumbricoid ascarides, and then of the necroscopic results, and their signification.

Vincenzo, aged 40, married, a shoemaker by trade, was, on the 14th of February, 1857, admitted into the Spedale di Santa Maria Nuova. Scarcely had he been admitted when he was attacked with a convulsive fit, supposed to be epileptic. The state of the patient when placed under Dr. Gonnelli's care was as follows:—He was sunk in profound stupor, had the appearance of a man labouring under severe illness, and was extremely emaciated. If questioned, he replied in words bearing no relation to the inquiry. He refused all nourishment, whether solid or fluid, and if by chance he consented to take something, it seemed as if a spasm of the pharynx prevented deglutition. His pulse was small, unsteady, and low. Examination of the thoracic and abdominal cavities revealed no sign of any lesion of the viscera contained therein. Determination to the meninges or cerebrum was diagnosed, and cupping to the nape of the neck and sinapisms to the extremities were prescribed. A stimulating mixture was given to produce reaction. Blisters were subsequently applied to the nape of the neck and to the calves of the legs. The patient persisted in refusing any internal remedy or drink, with the exception of some spirit and water prescribed in order to remove the extreme depression in which he lay. Clysters of broth and of cordials were administered. On the 20th he showed some sign of improvement; but this was only transient, for he soon fell into a worse state than before, and died on the 25th of February.

The foregoing report is necessarily imperfect, as the patient gave no account of himself, and Dr. Gonnelli was unable to obtain, from any other source, the previous history of the case. He knew only that the disease had run a course of several days before he saw the patient, and that the latter, before and during the attack, had suffered from the most profound anguish of mind.

I shall now detail the result of the autopsy.

The vessels of the membranes of the brain presented a considerable degree of sanguineous engorgement. The arachnoid cavity contained about four drachms of limpid serum; two drachms of serum of similar quality were enclosed within the lateral ventricles. The entire cerebral substance was rather highly injected with blood. The superior lobes of both lungs were in a state of superficial lobular emphysema; the lower lobe of the right in its anterior half presented simple sanguineous engorgement, in its posterior portion there was incipient gray hepatization; the lower lobe of the left lung was throughout affected with hepatization in the same degree. The pericardium contained about four drachms of clear and yellowish serum. In the right auricle of the heart was a polypiform concre-

tion, which penetrated into the corresponding ventricle, and thence into the pulmonary artery. The stomach contained eight and the duodenum five lumbricoid worms. In the ileum were fifty-eight worms of the same kind. Four lumbricoid ascarides were also found in the second half of the large intestine. On the mucous membrane of the intestines were here and there scattered slight vascular networks. The mucous membrane of the cæcum was strongly injected with blood. The spleen and kidneys were in a state of sanguineous congestion.

The convex surface of the right lobe of the liver presented at its most prominent part an oval whitish space, of about 3 centimetres (1·1811 inches) in length, and 1 in breadth, its greater diameter passing from right to left. At this point of the surface of the liver appeared in addition small cavities, resembling imperfectly distended cysts. A longitudinal incision made in the whitish space brought to light, to our surprise, a worm, easily recognised as a lumbricoid. Supposing that another worm might be found in the parenchyma of the liver, we felt the surface of the viscus, and at the left side of the convex aspect of the right lobe we thought we perceived through the tissue the cylindrical form of a lumbricoid. On dividing the part, we discovered an ascaris of the same kind as the first.

The first worm found in the right lobe of the liver was knotted in its middle, and was completely twisted on itself; the other was twisted throughout a great part of its body, and had one extremity buried in the substance of the organ. The two cavities in which the worms were enclosed contained a small quantity of granular liquid, of a yellowish-white colour, inclining to reddish. Microscopic examination of this fluid revealed globules of pus, cylindrical epithelial cells, and eggs of lumbricoid ascarides, in great number. The latter were met, however, only in the fluid in which the second worm was found. The capacity of the two cavities containing the worms was little more than equal to the volume of the latter. The right cavity was so superficial that its upper wall was at one point formed merely by the capsule of Glisson and the surrounding peritoneum: so that the lumbricoid in this cavity brought to mind that of the son of Vierus, the head of which, according to the expression of Sennertus, was in contact with the investing membrane of the viscus. The surfaces of the two cavities were lined with layers of coagulated fibrin; the hepatic parenchyma within this was reddened with vascular sanguineous congestion, and was rendered more compact and harder through transudation of plastic matter. In a word, the parenchyma of the liver, forming the walls of the two cavities, presented the character of chronic inflammation. As such pathological changes were evidently due to the presence of the lumbricoid worms, it was immediately inferred that these had existed in the liver long before the death of the patient. The importance of this conclusion will hereafter appear. If, however, the pathological changes of the liver led to such a conclusion, they re-

vealed nothing as to the origin of the lumbricoid worms, which, consequently, remained a problem to be solved.

On this subject Professor Pellizzari observed, in lecturing on the case to his pupils, that several hypotheses might be formed. Either the two lumbricoid worms reached the liver from the small intestine passing through the biliary ducts, or they were developed in the liver itself. The latter hypothesis, again, divides into two,—the one referring to spontaneous generation (eterogenesi), the other to the transport of the eggs of lumbricoid worms absorbed in the intestines, either by the ultimate ramifications of the vena portæ, or by the ductus choledochus. Professor Pellizzari, however, adopted the former hypothesis, notwithstanding Cruveilhier's statement that the introduction of lumbricoid ascarides into the biliary passages through the orifice of the choledochus is possible only after death, or during the agony. Being, however, dissatisfied with advancing a simple hypothesis, he undertook the following experiment, to give it the force of a demonstrated fact.

He first of all prepared the hepatic duct, its prime ramifications, and the sinus of the vena portæ, in order to see which of these vessels communicated with the cavities containing the lumbricoid worms. Then he filled with water the cavity situated in the left part of the right lobe of the liver, hoping that this fluid would indicate the course taken by the worm in its passage into the substance of the liver. The water in this experiment did not, however, undergo any depression of level, whence it was inferred that the hepatic duct traversed by the animalcule was either obliterated or still obstructed by the worm, and that other expedients should be resorted to. He then brought the extremity of a fine elastic syringe along that portion of the worm which was still concealed, and by a manœuvre insinuated it between the worm and the substance of the liver. On then injecting water, the latter was observed to appear immediately in the hepatic duct. In this manner the presumption became greater, but was much increased when, on taking the worm from its cavity, the portion of it which had remained hidden was observed to be tinged yellow with the bile. On examining the animal it was seen that the portion tinged yellow was the caudal extremity, fully in accordance with the idea Professor Pellizzari had formed as to its origin. Although these facts had no need of support, the Professor wished to corroborate them by two other experiments. He filled the cavity with water as in the first experiment, but on this occasion we observed the fluid gradually diminish, and appear at the hepatic duct; lastly, as if by way of checking his experiment, he injected a column of water by means of an elastic syringe into the hepatic duct, and the fluid was immediately discharged into the cavity, and exactly at the point whence the tail of the worm was drawn.

It was not possible to perform a similar series of experiments in reference to the cavity containing the first worm, in consequence of

the horizontal incision which had been made into it before the worm was discovered. I think, however, that every one will admit that all the inferences deduced from the experiments instituted on the first cavity are also applicable to the second, and to the worm it contained. Lastly, I would observe that the presence of the cylindrical epithelial cells in the fluid bathing the two lumbricoid worms is a fact yielding no feeble support to the conceived opinion, inasmuch as these could be derived only from the internal membrane of the biliary ducts. The fact further affords great reason to suppose that the two cavities containing the lumbricoid worms were formed by the dilatation of two biliary ducts.

From all these facts it appears to me that we may reasonably infer that the lumbricoid worms penetrated into the liver through the ductus choledochus and the hepatic duct. To this conclusion the presence of so many worms of the same species in the gastro-enteric tube affords no small sanction. I, therefore, believe that every one will concur in the opinion formed by Professor Pellizzari. Nevertheless, as dissent is not impossible, and desiring moreover to touch upon all the critical arguments advanced by the Professor, I think it well to examine what hypotheses might be brought forward in support of a different origin of the lumbricoid worms in question. And, first of all, concerning heterogenesis.

The very ancient hypothesis of spontaneous generation, according to the experiments of Redi and Vallisnieri, has steadily lost ground, since, in proportion as the study of comparative physiology has progressed, additional evidence has appeared in favour of the natural propagation of organized beings. So that, at the present day, very many naturalists reject heterogenesis for those beings also whose mode of production is unknown, and Ehrenberg admits by analogy that all infusoria multiply by natural propagation. But, although this mode of reasoning is permitted in the physical sciences, as heterogenesis has nothing in it repugnant to the mind, I think it a risk to totally reject it. But if this reservation is necessary in reference to those thousands and thousands of species of organized beings, of whose structure and functions we are ignorant, it seems to me to be reasonable not to admit equivocal generation, with respect to lumbricoid worms. Modern helminthologists not only declare that lumbricoid worms are endowed with sex, but they describe with much exactness, in the male, the double penis, the vas deferens, the spermatic vessels, and the semen; in the female, the vulva, the uterus, the oviduct, the ovary, and the ova. It further follows from their investigations that the genital apparatus of these beings is, in proportion, the most highly developed part of their body, and that thousands and thousands of ova are included within a single female. Hence, it is apparent how provident nature has been to secure the species of the lumbricoids, and, consequently, how unfounded the hypothesis is that these beings owe their existence to spontaneous generation.

I shall now speak of the hypothesis which would attribute the

occurrence of lumbricoid ascarides in the liver to the arrival in that viscus of ova from the final ramifications of the vena portæ. Against this supposition a very serious objection immediately presents itself. It is evident that if an opening should be established in the capillary bloodvessels, capable of permitting the passage of the ova of the lumbricoids, an immediate extravasation of blood would follow, constituting in itself an impediment to their introduction into the sanguineous system. Nor does it bear on the point to quote the recent experiments of Marfels[a], since the difference between the blood corpuscles and the eggs of lumbricoid worms is too great. The diameter of the globules of the blood is $0{\cdot}007^{mm}$, that of the ova of lumbricoids is $0{\cdot}090^{mm}$. The blood globules possess a very great elasticity, by means of which they can adapt their form to that of channels narrower than their own diameters, and by exosmotic actions their volume is capable of undergoing a great diminution. If it cannot be denied that such a property and such actions may belong to the eggs of lumbricoid worms, it is nevertheless certain that the latter do not possess them to the same degree as the blood corpuscles do. Finally, if the shell of these eggs be really calcareous, as Valentin believes, the change they would be capable of undergoing, either in form or volume, would of necessity be extremely limited. Hence, it is not surprising that Marfels should have placed beyond doubt the passage of blood corpuscles from the interior of the intestinal cavity into the current of the circulation, and that such a passage, on the part of the eggs of lumbricoid worms, should be regarded, if not absolutely impossible, at least as highly improbable.

Lastly, I shall say a few words in reference to the hypothesis which would refer lumbricoid worms found in the liver to eggs which have penetrated into this viscus through the biliary passages. It is evident what difficulties this hypothesis encounters. It would, in the first place, be necessary to attribute to the orifice of the ductus choledochus an absorbing power, and then to admit that the ova of lumbricoid worms which have entered the biliary passages should be capable of proceeding in a direction opposed to the column of bile ; the former of which conditions is not admitted by physiologists, while the latter is manifestly contrary to hydraulic laws.

I would advance one further reflection against all the hypotheses I have combated. It is a general law that all living beings in nature, not excluding man, feel the influence of the medium in which they are developed and live—a fact which is demonstrated by the modifications which races of animals undergo, whether in their physical constitution or in their form, in consequence of the diversity of external agents. It is a not less general law that the influence of the surrounding medium is exercised with greater force in proportion to the greater simplicity of the organization acted on. It is reasonable to admit that lumbricoid worms are subject to these

[a] Gazette Médicale, 7th March, 1857.

two laws, and that therefore they must undergo an abnormal development whenever they come into existence and grow under extraordinary influences. The worms found by us in the liver possessed their own form, and, with the exception of a slight deviation in that situated to the left, presented all the ordinary physical qualities of such animals. The worm which occupied the left side of the great lobe of the liver was 18 centimetres (7 inches) in length, the other was a little under that measurement; the first was of the female sex, the latter, of the male. Consequently in this case we also find the proportions in length between the male and female lumbricoids verified. The presence of the ova exclusively in the cavity including the female testifies that they proceeded from her, and consequently from the exercise of her normal function, as is further established by the size and shape of the eggs themselves, corresponding precisely with the descriptions of helminthologists. Now, if the laws above quoted obtain, it is evident how little support a consideration of the difference between the hepatic parenchyma and the medium in which such worms are usually produced and live, would allow to the supposition that the lumbricoids in question had been developed in the liver.

I hope I have thus fully demonstrated by every mode of argument the correctness of Professor Pellizzari's opinion, and the improbability of the hypothesis which might be started as to a different origin of the animalcules under consideration. Now, bearing in mind the conclusion deduced from the pathological alterations of the liver, and connecting therewith the inferences warranted by the experiments performed and by the foregoing critical discussion, it appears to me that we may declare solved a question which has so long agitated the cultivators of pathological anatomy. We shall, therefore, consider it established that lumbricoid worms may penetrate into the liver during life—a fact which, until the present, had not been demonstrated. As, however, some writers speak of lumbricoids in the liver in a manner calculated to make it appear that they had penetrated into that viscus during life, it is my duty to show how the facts adduced are deprived of the value attributed to them.

In tracing the history of the penetration of lumbricoid ascarides into the liver through the biliary passages, I have observed that Laennec, speaking of those found by him, says that the hepatic viscus was, as it were, *eroded* by those worms. With respect to this fact I shall quote a few critical words by Cruveilhier:—"It is to be regretted," he says, "that an able observer, like Laennec, should not have entered into fuller particularities, and, above all, that he should not have specified the alteration he wished to indicate under the metaphorical expression *eroded*"[a]. The same criticism would apply to the case reported by Andral, who speaks of a liver corroded (labouré) by lumbricoid ascarides. In fact, both writers

[a] Diction. de Méd. et Chir. prat., Art. Entoz. p. 341.

pronounce a decision without stating the facts whereon their judgment is founded. I may add, that in the case which forms the subject of this paper the liver did not present any changes suggestive of the idea of the process spoken of by Andral and Laennec, although the lumbricoid worms had evidently penetrated into the viscus during life. What shall I say, then, of Tonnelé's case of the liver which was the seat of three communicating abscesses, in one of which a lumbricoid was contained? It is manifest that he does not adduce any fact calculated to prove that the alteration of the liver was subsequent to the introduction into this viscus of the lumbricoid ascaris. On the contrary, reflecting on the plurality of the abscesses, I believe that we have reason to hold that the pathological alteration of the liver was not an effect of the presence of the worm. In Lebert's General and Special Anatomy, we read these very words:—"We have seen the lumbricoid ascaris enter the biliary ducts, and produce numerous abscesses of the liver, which have at length perforated the diaphragm and the lung, and have hastened death by producing pneumothorax"[a]. Using a favourite phrase of those whose language Lebert writes, I will say—To explain such facts is to refute them.

All the authors I have quoted have argued the introduction of lumbricoid worms into the liver during life, from the coexistence in this viscus of such worms, and of a pathological change. Guersant, who found two lumbricoid ascarides in a liver, infers such an introduction from the symptoms. I shall, in a few words, explain the facts on which he rests, and his mode of reasoning. A child labouring under slight attacks of colic was seized with convulsions, rapidly followed by death. As the convulsions had immediately succeeded the fits of colic, Guersant believed that the violent and instantaneous introduction of the two lumbricoids was the true cause of the convulsions and death. Guersant considered the absence of any apparent alteration of the nervous cavities to be a fact confirmatory of his opinion. Every one, however, knows how characteristic of the phenomena of convulsive diseases their instantaneous occurrence is, and how such attacks are more fatal in infancy than at other periods of life. The fact of the convulsions having supervened on fits of colic might have had some value if Guersant had with precision removed every other cause capable of producing both. He, for example, does not state whether or not the gastro-enteric tube contained lumbricoid ascarides which, without leaving the primæ viæ, are capable of giving rise to colic and convulsions. Neither does he mention any morbid change in the liver, and it appears unlikely that lumbricoid worms penetrating into this viscus during life should leave it in a state of integrity; consequently, this fact also is deprived of the demonstrative value attributed to it by Guersant.

What shall I say, then, of the mania, the convulsions, the jaundice,

[a] Page 392.

the hemoptysis, and other affections attributed by some writers to the presence of lumbricoid worms. With respect to this, I shall confine myself to repeating what Morgagni says in answer to another argument. This is conjecture, and not observation[a].

We may, therefore, maintain that if the cases recorded of lumbricoid worms having penetrated into the liver through the biliary passages are many, none of them is sufficient to prove that the penetration took place during the life of the individuals in whose bodies such worms have been found. When writers have sought to demonstrate this fact, deducing their arguments from the course of the disease and the nature of the morbid phenomena, they have not completely removed all the other causes to which these might be referred, and when pathological anatomy has supplied the foundation on which they depended, they have either not accurately described the morbid changes observed, or they have failed to prove that these could proceed only from the presence of the worms. In the first case it might always be reasonably doubted that the morbid phenomena and the mode of their progress have been the effects of the penetration of the lumbricoid worms into the biliary passages, or into the liver; in the second it will always be a question to be decided whether the animalcules had produced the hepatic alteration, or had penetrated into the viscus at a time when the latter already existed, Therefore, without absolutely denying that in the cases reported by authors lumbricoid worms have penetrated into the liver during life, we may declare that positive data demonstrative of such penetration are wanting. It then becomes probable that, at least in the majority of cases, the lumbricoid worms have transferred themselves into the liver after the death of the individual in whom they were found, as in the dead body they are known to emigrate from their ordinary seat. Their introduction into the biliary passages and the liver will occur more easily when they continue very lively, as in the cases spoken of by Angelo Dubini in his very beautiful Entozoografia. I may further observe that almost all writers on the subject have omitted to state whether the morbid alterations found by them in the liver were specially connected with pathological conditions of other viscera, and particularly of the gastro-enteric tube. We know in fact, that occasionally a communication is established between one viscus or another, and a morbid cavity in the liver, and that the passage of lumbricoid worms might take place through it. On this account the facts reported by authors lose not a little of their value. And here I will state that in the liver observed in the School of Pathological Anatomy no alteration existed externally to the two cavities in which the lumbricoid worms were contained, and that these did not communicate with the gastro-enteric tube, except through the natural passages.

If pathological anatomy is insufficient to establish all we demand

[a] De sedibus et causis Morborum, Epist. xxiii. 15.

of her, I ought now to compare the morbid alteration of the liver with the disease, so as to establish the true value of the change itself. The deficiency, however, in the history, our imperfect knowledge of the morbid phenomena and of their course, and the complications of the case, render almost wholly futile, in this instance, the method always followed by Professor Pellizzari in the School of Pathological Anatomy. I agree with him that on the present occasion it is not possible to form more than a feeble conjecture. May not the disproportion between the degree of congestion of the brain and its membranes, and the duration and intensity of the disturbance of the sensorial functions, lead us to suspect that a very unusual morbid element had influence upon such disturbance?

To recapitulate, I would conclude:—

1st. That instances of lumbricoid worms having penetrated into the liver through the biliary passages are extremely rare, and that, consequently, it is not wholly useless to add another.

2nd. That the arguments brought forward by authors to prove the introduction of lumbricoids into the liver during life are deprived of all value, because, if derived from the pathological changes, the latter either are not well defined, or leave it uncertain whether they were anterior or subsequent to the introduction of the worms; and if derived from symptoms, the necessary abstractions have been neglected.

3rd. That the case observed in the School of Pathological Anatomy shows plainly that the lumbricoids existed in the liver long before the death of the individual, as results from the pathological alterations of the viscus; and that they proceeded from the biliary passages (and, consequently, from the intestine) follows clearly from the experiments performed, and from the critical examination of the hypotheses which might be advanced as to a different origin.

4th. That the question of the possibility of the introduction of lumbricoid worms from the intestine into the biliary passages and into the liver during life, is definitively solved.—*Gazzetta Medica Italiana Toscana*, 16th June, 1857, p. 193.

Memorandum on the Use of Biniodide of Mercury, in combination with the Rays of the Sun for the Cure of Goitre. Communicated by F. J. MOUAT, M. D., F. R. C. S., Inspector of Gaols and Dispensaries, Bengal.

IN the districts about Motiharee, Segowlee, Bethiah, Bhagoha, and on to Goruckpore, indeed along the whole line of the Teraie, the goitre is so prevalent that it can scarcely be an over-estimate to state that, in many localities, one individual in ten is afflicted with this horrible disorder.

In some cases the tumour attains a certain size, and passes into a chronic state, without serious inconvenience to the person affected;

in others, it increases rapidly, and, at the end of a few years, after becoming an enormous excrescence, terminates in loss of intellect in some cases, and in others in death.

In the cold weather of 1854–55, Captain Cunningham, second in command, 12th Irregular Cavalry, began to apply the biniodide to the goitre in the following manner:—

An ointment was prepared according to a formula, as follows:—

Melt 3 lbs. of lard or mutton suet, strain and clean; when nearly cool, add 9 drachms of biniodide of mercury, taking care to make the powder fine by trituration in a mortar.

Work in the mortar until no grains of red are apparent in the ointment, and put in pots for use, taking care always to keep both powder and ointment from the rays of light.

Use as follows:—

About an hour after sunrise apply the ointment to the goitre with a spatula made of ivory, or thin, broad, smooth bamboo, quantity according to size of tumour—rub it well in for at least ten minutes. Let the patient then sit with his goitre held well up to the sun, and let him remain so, as long as he can endure it.

It is probable that about noon he will suffer severe pain from the blistering effect of the ointment, although no pustules are raised on the skin. About 2 P. M. the ointment should again be applied with a very careful and tender hand, and the patient should be dispatched to his home, with orders not to touch the ointment on any account with the hand, but to allow it to be gradually absorbed, which absorption will be complete on the third day.

This treatment is quite sufficient for an ordinary cure. Should the case be a very bad one, the patient is ordered to return next year for the removal of what may remain of the tumour. Except in goitres of the very largest size this is seldom necessary. After the application of the second year no goitre has been known to continue.

The patients begin to come about the middle of November, and continue to the end of March; after that time the sun's rays act so violently on the medicine, that it is not advisable to apply it.

The cures effected have been very numerous. On my arrival at Segowlee, I was glad to join Captain Cunningham in this good work; but with him rests all the credit of having established it.

The cases are not now so numerous as they were in 1855. At that time 500 or 600 were not unfrequently treated in a single day; a small charge of two pice for each cure was levied for some time, in order to make the people set more value on it; but as this seemed to check some patients, it was discontinued.

Until lately no exact account of the numbers treated has been kept; but since Captain Cunningham commenced, up to the present time, it cannot have been less than 60,000. Many come from a very great distance, Goruckpore, Mozufferpore, Mulaye, but the cases in the vicinity are decidedly less numerous—in fact, the dis-

order is being extinguished. In no case, except one, have we failed to make a complete cure during the second year.

I am now on the point of departure for England, and I should be glad to think that the medicine might be continued to the people. I would propose that stations for its application should be established at Mozufferpore, at Motiharee, at Segowlee, at Bethiah, at Rutawal, or Bhogaha, at Ramnuggur, and at Goruckpore. To each station might be appointed a dresser, on rupees eight per mensem, to apply the ointment, which should be furnished monthly from a central station. It would be proper to order that the ointment be always applied in presence of the dresser. If given to be carried off, it will be sold. Nothing else on the subject strikes me at present; but cases have occurred when the patient rubbed off the medicine when the smart became severe, and therefore the patients should be kept until sunset, after the stuff has been rubbed on. Any cooly can be taught to do it: all my servants apply it, and some of the troopers; a tender hand, and gentle use of the spatula, after softening the ointment by working up, is all that is needed.

Enclosed is the list of the cases treated since the commencement of the present year by me. Captain Cunningham has treated many hundred cases in addition to these, and, as I write, patients are pouring into the compound.

Setting humanity aside, I think that, in a financial point of view, it would pay Government to get these poor people cured, for each life, or each sound man, must be worth at least one rupee per annum to the revenue.

It appears to me that the rays of the sun, either by some chemical action on the ointment, or by causing its more rapid absorption, have much to do with the cures effected; but I am about to make the experiment of treating one man by night before a large fire, and comparing the case with one of a similar size and standing, treated in the usual way.

By this means I hope to ascertain how much of the cure depends on the action of the sun's rays, whether as regards chemical properties or the absorbents of the skin.

(Signed) J. G. HOLMES, *Major,*
Commanding at Segowlee.

8th February, 1857.

MY DEAR CUNNINGHAM,—Kindly answer the following questions:—

1. How many goitre patients did you treat in 1854, as near as you can guess, or what was the greatest number in one day?

2. Have you reason to suppose that, from increased size, the goitre in many cases proves fatal?

3. Have you seen any cases of goitre patients whose intellect was affected by the disorder?

4. In your opinion, has the biniodide of mercury in any case failed to effect a cure?

5. Have you known any instance in which danger to the patient arose from its application?

At the request of Dr. Mouat, Inspector of Prisons, I am drawing up a report on the subject, with a view to establish stations for the cure of goitre at Moteeharee, Segowlee, Govindgunge, Bettiah, Rutwal, and Goruckpore.

Yours very faithfully,
(Signed) J. G. HOLMES.

ANSWERS.

1st. In the cold weather of 1854–55, I must have treated, I should say, upwards of 20,000 goitre people, or rather 25,000; and in one day I have seen as many as 500 at my house, who were all treated.

The people came in such great numbers that (after giving the medicine free at first) I made each person pay two pice (Goruckporee, of which there are from 100 to 106 in the rupee), and actually collected rupees 160 in this manner. This alone proves 16,000 to have been treated, besides which all those who came back a second and third time, and very many did so, had not to pay again; besides which a great number were treated before I commenced making any charge.

So I cannot be wrong in putting down the whole number for the year at from 20,000 to 25,000.

2nd. From what the people have told me, and from the state in which I have seen some with enormous goitres (breathing with a noise like a broken-winded horse), I have reason to suppose that the increased size of the goitre does prove fatal in not a few cases; as, when so enlarged, it prevents the person afflicted with it from using any exertion, and, as I have been told, even from eating and drinking without extreme difficulty, which I can easily believe.

3rd. I have seen many cases of goitre patients whose intellect was decidedly affected by the disease, I should say, as, after the goitre was reduced, they appeared much more intelligent and like rational creatures, which they were not before. However, there are so many idiots about this part of the country only slightly affected with goitre, that it would be difficult to say whether idiotcy was actually induced by it, or the symptoms increased in those whose intellect was naturally defective.

4th. To my certain knowledge the biniodide of mercury did fail in one case to effect a cure. I applied it myself seven or eight times on one man, and was particularly careful in seeing that he did not rub it off, but it did not act upon him, which I could not account for. In old cases, where the goitre has become as hard as a stone, and about the size of a turkey's egg, I have found it fail; but when

the flesh is soft I have seen the goitre wonderfully reduced, and I have no doubt but that it would be removed altogether were the people only to continue the application, which, however, they seldom do, owing to the great pain it causes.

5th. I have never heard of any instance in which danger arose to the patient from application of the biniodide of mercury, though a man did come to me with sores on his neck, which he said had been caused by the medicine a year and a half before; but since then I have seen another man with similar sores which the doctor said were scrofulous, and he never had the biniodide applied to his neck.

Cases of Goitre treated by me since 1st January, 1857.

	Cases.
January 1, 1857, . . .	73
,, 2, ,, . . .	49
,, 3, ,, . . .	104
,, 4, ,, . . .	58
,, 5, ,, . . .	17
,, 6, ,, . . .	29
,, 7, ,, . . .	203
,, 8, ,, . . .	156
,, 9, ,, . . .	44
,, 10, ,, . . .	103
,, 11, ,, . . .	125
,, 12, ,, . . .	246
,, 13, ,, . . .	93
,, 14, ,, . . .	85
,, 15, ,, . . .	106
,, 16, ,, . . .	74
,, 17, ,, 18, ,, 19, Medicine not ready.	
Carried forward, . .	1466

	Cases.
Brought over, . .	1466
January 20, 1857, . . .	140
,, 21, ,, . . .	230
,, 22, ,, . . .	110
,, 23, ,, . . .	125
,, 24, ,, . . .	172
,, 25, ,, . . .	203
,, 26, ,, . . .	119
,, 27, ,, . . .	98
,, 28, ,, . . .	74
,, 29, ,, . . .	136
,, 30, ,, . . .	109
,, 31, ,, . . .	87
February 1, ,, . . .	94
,, 2, ,, . . .	103
,, 3, ,, . . .	68
,, 4, ,, . . .	92
,, 5, ,, . . .	139
,, 6, ,, . . .	122
Total, . . .	3687

—*The Indian Annals of Medical Science*, April, 1857.

INDEX

TO THE TWENTY-FOURTH VOLUME.

The Letters D. O. S. refer to the Reports of the Dublin Obstetrical Society; T. C. P. to the Transactions of the Association of the King and Queen's College of Physicians; C. M. & S. S. to the Cork Medical and Surgical Society; and B. M. S. to the Belfast Medical Society.

Abdominal presentation, case of, by Dr. Bagot, D. O. S., 445.
Aberdeen, royal hospital for the insane, report of the, *Rev.*, 385.
Abscess, Mr. Ledwich on the treatment of, by drainage-tubes, 301.
Academy of medicine, Dr. Arnott on the expediency of establishing an, in England, *Rev.*, 441.
Agamemnon, Dr. Mackay on the cholera in H. M. S., *Rev.*, 395.
American journal of insanity, *Rev.*, 372.
American medical association, transactions of the, *Rev.*, 207.
Anæsthesia, local, in dentistry, M. J. B. George on, *Notice*, v.
Anatomy, pathological, Dr. Gross' elements of, *Rev.*, 415.
Aneurism, of the ascending aorta, case of, by Dr. Finn, C. M. & S. S., 235; of the popliteal artery, case of, cured by compression, 317; popliteal, case of, by Dr. Murney, B. M. S., 451.
Aneurisms, M. Broca on, *Rev.*, 148.
Animal physics, Dr. Lardner on, *Rev.*, 204.
Anteflexion of the uterus, Dr. J. H. Bennet on, 314.
Aorta, aneurism of the ascending, case of, by Dr. Finn, 235.
Apoplexy of the kidneys, Dr. Lees on, T. C. P., 222.
Arnott, Dr., on the expediency of establishing an academy of medicine in England, *Rev.*, 441.
Artery, ligature of the popliteal, in a case of disease of the knee-joint, 273; popliteal, cases of aneurism of, cured by compression, 317.
Artillery officers, manual for, *Rev.*, 175.
Association, American medical, transactions of the, *Rev.*, 207; of the college of physicians, transactions of the, 209.
Asylum quarterly journal of mental science, *Rev.*, 363.
Asylums, lunatic, eighth report of the inspectors on, in Ireland, *Rev.*, 328; in Scotland, report by her majesty's commissioners on, *Rev.*, 358; notes on Belgian, by Dr. Webster, *Rev.*, 374.
Athill, Dr., on abnormal enlargement of the labia and nymphæ removed by the écraseur, 233.
Atrophy of the lungs, acute, Professor Buhl on, *Trans.*, 246.
Aveling, Dr., on the excitation of fœtal movements by cold, 447.

Babington, Dr., case of popliteal aneurism cured by compression, by, 322.
Bagot, Dr., case of abdominal presentation by, D. O. S., 445.
Balocchi, Dr., manual of obstetricy by, *Rev.*, 390.
Baltic and Black sea fleets, medical statistical returns of the, *Rev.*, 395.
Barclay, Dr., sanitary report by, *Notice*, vi.

Beale, Dr., how to work the microscope, by, *Rev.*, 437.
Belfast district hospital for the insane, report of the, *Rev.*, 376.
Belfast medical society, transactions of the, 451.
Belgian lunatic asylums, notes on, by Dr. Webster, *Rev.*, 374.
Bennet, Dr. J. H., on anteflexion of the uterus, 314.
Biniodide of mercury for the cure of goitre, Dr. Mouat on, 500.
Broberg, J. W., lectures on the history of medicine by, *Rev.*, 175.
Broca, M., on aneurisms, *Rev.*, 148.
Browne, Dr., report of the Crichton royal institution for the insane, by, *Rev.*, 383.
Browne, Mr., R. N., case of melanosis oculi by, B. M. S., 453; case of fracture by, 458; case of severe railway accident by, 459; cases of gunshot wounds by, B. M. S., 462; case of a large fibrous tumour of the neck by, 464.
Budd, Dr., on diseases of the liver, *Notice*, v.
Buhl, Professor, on acute atrophy of the lungs, *Trans.*, 246.
Butcher, Mr., reports in operative surgery by, 257.

Cancer, the treatment of, Dr. Fell on, *Rev.*, 199.
Carbonic acid gas, Dr. Churchill on the employment of, T. C. P., 227.
Chancre, Professor Faye's investigations on, *Rev.*, 400.
Chassaignac, M., Mr. O'Doherty on the practice of écrasement linéaire by, 120; notice of the views of, on the employment of chloroform, 120.
Childhood of man, Dr. Heyfelder on the, *Rev.*, 394.
Children, institution for sick, Professor Gustaf von Düben's report of the, for 1855, *Rev.*, 175; Dr. Sätherberg on defects in the education of, *Rev.*, 175.
Chloroform, views of M. Chassaignac on the employment of, 120; Dr. Hobart on the peculiar action of, 133; in strumous ophthalmia, Dr. Thorp on, 106, 326.
Cholera, at Varna, Dr. Mackay on the, *Rev.*, 395; in Sweden, 408.
Churchill, Dr., on the employment of carbonic acid gas, T. C. P., 227.
Climate, the effects of, on tuberculous disease, Mr. Lee on, *Rev.*, 431.
Cold, Dr. Aveling on the excitation of fœtal movements by, 447.
Compression, cases of popliteal aneurism cured by, 317.
Consumption, Dr. B. W. Richardson on the hygienic treatment of pulmonary, *Rev.*, 161.
Cork medical and surgical society, transactions of the, 235.
Corry, Dr., case of traumatic tetanus by, B. M. S., 461.
Cow-pock, Professor Faye's investigations on, *Rev.*, 400.
Crania, human, in the army medical museum, Dr. Williamson on, 42.
Cream, Dr. Hamberg on, *Rev.*, 407.
Crichton royal institution for the insane, report of the, *Rev.*, 383.
Crimea, Sir John Hall on the report of the sanitary commissioners in the, *Rev.*, 412.
Curare, physiological and toxicological investigations on, by Professor Pelikan, *Trans.*, 480.

Davy, Dr. John, on the urinary secretion of fishes, *Rev.*, 185.
Dentistry, local anæsthesia in, M. J. B. George on, *Notice*, v.
Disease, God in, by Dr. Duncan, *Rev.*, 203.
Diseases, of the liver, Dr. Budd on, *Notice*, v.; Dr. Fenwick on the causes and prevention of, *Notice*, vi.; epidemic, in Sweden, *Rev.*, 407.
Dobell, Dr., on the hæmantlion, *Notice*, viii.
Drainage tubes, Mr. Ledwich on the treatment of abscess by, 301.
Düben, Baron Gustav von, report on the institution for sick children, by, *Rev.*, 175.
Dumfries, report of the Crichton royal institution for the insane at, *Rev.*, 383.
Duncan, Dr., on the duration of labour, *Notice*, viii.

Écrasement linéaire, Mr. O'Doherty on the practice of, 120.
Écraseur, Dr. Atthill on abnormal enlargement of the labia and nymphæ removed by the, 233.
Education of children, Dr. Sätherberg on defects in the, *Rev.*, 175.
Eissen, Dr. E., on Soultzbad mineral waters, *Notice*, v.
Elephantiasis of the scrotum, M. Larrey on, *Rev.*, 194.
Emboli, a contribution to the theory of, by A. Lindström, *Rev.*, 175.
Enchondroma of the upper jaw, Dr. Heyfelder's cases of, 284.
England, report of the commissioners in lunacy in, *Rev.*, 349.
Epidemic diseases in Sweden, Dr. A. T. Wistrand on, *Rev.*, 407.
Erichsen, Mr., the science and art of surgery, by, *Rev.*, 442.
Excision of joints, Mr. Butcher on, 257.
Eye, Mr. Williams on diseases of the, *Rev.*, 182; Dr. Thomson on the structure and functions of the, *Notice*, vii.; case of melanosis of the, by Mr. Browne, 453.
Eye and ear, Mr. Wharton Jones' catechism of the medicine and surgery of the, *Rev.*, 182.

Faye, Professor, manual of obstetricy, by, *Rev.*, 393; investigations on the inoculation of the matter of cow-pock and of chancre, by, *Rev.*, 400.
Fell, Dr., on the treatment of cancer, *Rev.*, 199.
Femur, successful excision of a large portion of the, 266.
Fenwick, Dr., on the causes and prevention of diseases, *Notice*, vi.
Fever, is intestinal hemorrhage diagnostic of typhus or typhoid? by Dr. H. Kennedy, 209.
Fever, puerperal, Dr. Murphy on, 1.
Fevers, Dr. H. Kennedy on the spots in, T. C. P., 209.
Fibrous tumour of the neck, case of, by Mr. Browne, R. N., 464.
Finn, Dr., case of hypertrophy of the heart and aneurism, by, 235.
Fishes, Dr. Davy on the urinary secretion of, *Rev.*, 185.
Fiske fund prize essays, *Rev.*, 431.
Fistula, anal, on the use of the écraseur in 128; vesico-vaginal, Dr. Sawyer on, D. O. S., 443.
Fleets, Baltic and Black Sea, medical statistical returns of the, *Rev.*, 395.
Fœtal movements, Dr. Aveling on the excitation of, by cold, 447.
Foreign bodies, Dr. Hardy on the introduction of, into mucous passages, D.O.S., 443.
Fracture, case of, by Mr. Browne, R.N., B.M.S., 458.
Fracture of the sternum during labour, case of, by Drs. Lucchetti and Posta, *Trans.*, 477.
France, Mr. Johnson on the south of, and the Pyrenees, *Notice*, vii.
French, Dr., case of quadruplets by, D.O.S., 445.
Friedberg, Dr., on myopathic paralysis, *Trans.*, 469.

Gallic acid, Dr. Lees on the use of, in purpura hemorrhagica, 222.
Gelston, Mr., case of popliteal aneurism cured by compression, 317.
George, M. J. B., on local anæsthesia in dentistry, *Notice*, v.
Gheel, insane colony at, notes on the, by Dr. Webster, *Rev.*, 374.
God in disease, by Dr. Duncan, *Rev.*, 203.
Goitre, Dr. Mouat, on the use of the biniodide of mercury in, 500.
Gross, Dr., elements of pathological anatomy by, *Rev.*, 415.
Gun-shot wounds, Dr. Saurel on, *Notice*, v.; cases of, by Mr. Browne, R.N., B.M.S., 462.
Gymnastics, vocal, by G. F. Urling, *Notice*, v.

Hæmantlion, Dr. Dobell on the, *Notice*, viii.
Hall, Sir John, observations on the report of the sanitary commissioners in the Crimea by, *Rev.*, 412.
Hamberg, Dr. N. P., on the modes of investigation employed in the chemico-pathological laboratory at Vienna, *Rev.*, 407; on cows' milk and its cream, *Rev.* 407.

Hamilton, Mr., on the formation of a new nose, 115.
Hardy, Dr., on the introduction of foreign bodies into mucous passages, D.O.S., 443.
Harvey, Dr., case of compound presentation of face and arm, by, C.M. & S.S., 240; case of recovery from ruptured uterus by, 241.
Hayden, Dr. T., on puerperal scarlatina, D.O.S., 443.
Heart, disease of the, Dr. H. Kennedy on, T.C.P., 222; hypertrophy of the, case of, by Dr. Finn, C.M. & S.S., 235; peculiar cavernous degeneration of the, Dr. Skrzeczka on, *Trans.*, 249; on effusion of blood in the tissues of the valves of the, by Professor Luschka, *Trans.*, 486.
Hernia, studies of, by Dr. Mesterton, *Rev.*, 175; radical operation for inguinal, *Rev.*, 176.
Heyfelder, Dr. Oscar, on cartilaginous tumours of the upper jaw, 282; on childhood, *Rev.*, 394.
History of medicine, lectures on the, by J. W. Broberg, *Rev.*, 175.
Hobart, Dr., on tetanus, 133; C.M. & S.S., 236; on the peculiar action of chloroform, nicotine, and the wourali poison, 143.
Hospitals for the insane, *Rev.*, 327.
Hospital nurses, Mr. South on, *Notice*, vi.
How to work the microscope, by Dr. Beale, *Rev.*, 437.
Hyperæsthesia, ophthalmic, in relation to strumous ophthalmia, Dr. Thorp on, 95.
Hypertrophy of the heart, case of, by Dr. Finn, C.M. & S.S., 235.

Infusoria, Professor Malmsten on the occurrence of, as intestinal animalculæ in man, *Rev.*, 407.
Inhalations, medicated, Dr. Osborne on, T. C. P., 222.
Injury, railway, case of severe, by Mr. Browne, R. N., 459.
Inoculation of the matter of cow-pock and of chancre, investigations concerning, by Professor Faye, *Rev.*, 400.
Insanity, and hospitals for the insane, *Rev.*, 327; American journal of, *Rev.*, 372.
Ireland, the ophthalmia of, Mr. Williams on, *Rev.*, 182; report of the inspectors on the lunatic asylums in, *Rev.*, 328.

Jamieson, Dr., report of the Aberdeen royal hospital for the insane by, *Rev.*, 385.
Jaw, Dr. Heyfelder on cartilaginous tumours of the, 282.
Johnson, Mr., on the south of France and the Pyrenees, *Notice*, vii.
Joints, excision of, Mr. Butcher on, 257; on the treatment of the suppurative crisis of, by free incision, 277.
Jones, Mr. T. Wharton, on diseases of the eye and ear, *Rev.*, 182.
Journal, midland quarterly, of the medical sciences, *Notice*, vi.; asylum quarterly, of mental science, *Rev.*, 363; of psychological medicine, *Rev.*, 368; American, of insanity, *Rev.*, 372.

Kennedy, Dr. H., on the character of the spots in fever, T. C. P., 209; "is intestinal hemorrhage diagnostic of typhus or typhoid fever?" T. C. P., 209; case of disease of the heart by, T. C. P., 222.
Keyser, Dr., on otology, *Rev.*, 208.
Kidney, apoplexy of the, Dr. Lees on, T. C. P., 222.
Kirkbride, Dr., report of the Pennsylvania hospital for the insane, by, *Rev.*, 388.
Knee-joint, case of excision of, by Mr. Butcher, 257.

Labia, abnormal enlargement of the, removed by the écraseur, 233.
Labour, Dr. Duncan on the duration of, *Notice*, viii.; case of fracture of the sternum during, *Trans.*, 7.
Laceration of the vagina and uterus, Dr. M'Clintock on, D.O.S., 447.
Lardner, Dr., animal physics by, *Rev.*, 204.

Larrey, M., on elephantiasis of the scrotum, *Rev.*, 194.
Law, Dr., on the effects of the shower-bath in delirium tremens, T. C. P., 214.
Ledwich, Dr., on inflammation of the prostate gland, 30; on the treatment of abscess by drainage tubes, 301.
Lee, Mr., on the effects of climate on tuberculous disease, *Rev.*, 431.
Lees, Dr., on the use of gallic acid in purpura hemorrhagica, T. C. P., 222; on apoplexy of the kidney, T. C. P., 222.
Lientery, Dr. Malmsten on the paramecium coli as a cause of, 409.
Light, Dr. Lloyd on the wave-theory of, *Notice*, vi.
Lindsay, Dr. Lauder, report of the Perth royal hospital for the insane by, *Rev.*, 386.
Lindström, Albert, a contribution to the theory of emboli by, *Rev.*, 175.
Liver, diseases of the, Dr. Budd on, *Notice*, v.; Dr. Mattei on worms in the, *Trans.*, 490.
Lloyd, Rev. H., D.D., on the wave-theory of light, *Notice*, vi.
Lucchetti, Dr., on fracture of the sternum during labour, *Trans.*, 477.
Lumbricoid worms in the liver, Dr. Mattei on, *Trans.*, 490.
Lunacy, report of the commissioners on, in England, *Rev.*, 349.
Lunatic asylums in Ireland, eighth report of the inspectors of, *Rev.*, 328; in Scotland, report of her majesty's commissioners on, 358.
Lungs, acute atrophy of the, Professor Buhl on, *Trans.*, 246.
Luschka, Professor, on effusion of blood in the tissue of the valves of the heart, *Trans.*, 486.

M'Clintock, Dr., case of suicidal poisoning by strychnia, by, T. C. P., 214; on laceration of the vagina and uterus, D. O. S., 447; on a new symptom of rupture of the uterus, D. O. S., 450.
Mackay, Dr., on the cholera at Varna, *Rev.*, 395.
M'Munn, Dr., report of the Sligo district hospital for the insane by, *Rev.*, 379.
Madden, Mr., on phantasmata, *Rev.*, 188.
Malmsten, Professor, on the occurrence of infusoria as intestinal animalculæ in man, *Rev.*, 407.
Man, the childhood of, Dr. Heyfelder on, *Rev.*, 394.
Manual for artillery officers, *Rev.*, 175.
Mattei, Dr., on lumbricoid worms in the liver, *Trans.*, 490.
Medical statistical returns of the Baltic and Black sea fleets, *Rev.*, 395.
Medicine, history of, lectures on the, by J. W. Broberg, *Rev.*, 175; psychological journal of, *Rev.*, 368; academy of, Dr. Arnott on the expediency of establishing an, in England, *Rev.* 441.
Melanosis oculi, case of, by Mr. Browne, B. M. S., 453.
Mental science, asylum quarterly journal of, *Rev.*, 363.
Mercury, Dr. Mouat on the use of the biniodide of, for the cure of goitre, 500.
Mesterton, Dr., studies of hernia by, *Rev.* 175.
Microscope, Dr. L. Saurel on the, *Rev.* 197; how to work the, by Dr. Beale, *Rev.*, 437.
Midland quarterly journal of the medical sciences, *Notice*, vi.
Midwifery, manual of, by Dr. Balocchi, *Rev.* 390; by Professor Faye, *Rev.*, 393.
Milk, cow's, and cream, Dr. Hamberg on, *Rev.*, 407.
Mineral waters, Soultzbad, Dr. E. Eissen on, *Notice*, v.
Montgomery, Dr., obstetric cases by, T. C. P., 214.
Moore, Dr., on scarlatina faucium, T. C. P., 218.
Mouat, Dr., on the treatment of goitre, 500.
Movements, fœtal, Dr. Aveling on the excitation of, by cold, 447.
Murney, Dr., case of popliteal aneurism by, B. M. S., 451.
Murphy, Dr., on puerperal fever, 1.

Museum, army medical, Dr. Williamson on the human crania in the, 42.
Myopathic paralysis, Dr. Friedberg on, *Trans.*, 469.

Neck, large fibrous tumour of the, case of, by Mr. Browne, R. N., B. M. S., 464.
Neuromas, Rud. Virchow's case of manifold, *Trans.*, 474.
Nicotine, Dr. Hobart on the peculiar action of, 143.
Nitsche, Dr., case of acute phosphorus poisoning by, *Trans.*, 252.
Norwegian medical society, discussion in the, on syphilization, *Rev.*, 400.
Nose, Mr. Hamilton on the formation of a new, 115.
Nurses, hospital, Mr. South on, *Notice*, vi.
Nymphæ, abnormal enlargement of the, removed by the écraseur, T. C. P., 233.

Obstetrical society of Dublin, proceedings of the, 443.
Obstetricy, manual of, by Dr. Balocchi, *Rev.*, 390; by Professor Faye, *Rev.*, 393.
O'Doherty, Mr., on the practice of écrasement linéaire by M. Chassaignac, 120; on the views of M. Chassaignac on the employment of chloroform, 120.
Operation, radical, for inguinal hernia, *Rev.*, 176.
Operative surgery, reports in, by Mr. Butcher, 257.
Ophthalmia, strumous, Dr. Thorp on, 95; of Ireland, Mr. Williams on the, *Rev.*, 182; note on chloroform in, by Dr. Thorp, 326.
Osborne, Dr., on medicated inhalations, T. C. P., 222.
Otology, Dr. Keyser on, *Rev.*, 208.

Paralysis, myopathic, Dr. Friedberg on, *Trans.*, 469.
Paramecium coli, Professor Malmsten on, as a cause of lientery, 409.
Pathological anatomy, Dr. Gross' elements of, *Rev.*, 415.
Pelikan, Dr., investigations concerning curare by, *Trans.*, 480.
Pennsylvania hospital for the insane, report of the, *Rev.*, 388.
Perth royal hospital for the insane, report of the, *Rev.*, 386.
Phantasmata, by Mr. Madden, *Rev.*, 188.
Phosphorus, poisoning by, Dr. Nitsche on, *Trans.*, 252.
Phymosis, on the use of the écraseur in congenital, 129.
Physicians, transactions of the association of the fellows and licentiates of the college of, 209.
Physics, animal, Dr. Lardner on, *Rev.*, 204.
Pneumonia, Dr. A. Smith on, 222.
Poisoning, suicidal, by strychnia, case of, by Dr. M'Clintock, T. C. P., 214; by phosphorus, Dr. Nitsche on, *Trans.*, 252.
Polypi, on the use of the écraseur in operations on, 128.
Popliteal aneurism, case of, by Dr. Murney, B. M. S., 451.
Popliteal artery, ligature of the, in a case of disease of the knee-joint, 273.
Porter, Dr., essays on syphilis by, 75, 287.
Posta, Dr., on a case of fracture of the sternum during labour, *Trans.*, 477.
Pregnancy, the influence of, on the development of tubercles, Dr. Warren on, *Rev.*, 431.
Presentation, compound, of face and arm, case of, by Dr. Harvey, C.M. & S. S., 240; abdominal, case of, by Dr. Bagot, D. O. S., 445.
Prostate gland, Mr. Ledwich on inflammation of the, 30.
Psychological medicine, journal of, *Rev.*, 368.
Psoas abscess, fatal hemorrhage in, from ulceration of the cava, 271.
Puerperal fever, Dr. Murphy on, 1.
Puerperal scarlatina, Dr. T. Hayden on, D. O. S., 443.
Purpura hemorrhagica, Dr. Lees on the use of gallic acid in, 222.

Pyrenees, Mr. Johnson on the, *Notice*, vii.

Quadruplets, case of, by Dr. French, D. O. S., 445.

Railway injury, case of severe, by Mr. Browne, R. N., 459.
Report, sanitary, by Dr. Barclay, *Notice*, vi.
Reports on insanity and hospitals for the insane, *Rev.*, 327.
Richardson, Dr. B. W., on the hygienic treatment of pulmonary consumption, *Rev.*, 161.
Ruptured uterus, case of recovery from, by Dr. Harvey, C. M. & S. S., 241 ; Dr. M'Clintock on a new symptom of, D. O. S., 450.

Sanitary report by Dr. Barclay, *Notice*, vi.
Sargint, Dr., case of popliteal aneurism cured by compression, by, 323.
Sätherberg, Dr., on defects in the education of children, *Rev.*, 175.
Saurel, Dr., on gun-shot wounds, *Notice*, v.
Saurel, Dr. L., on the microscope, *Rev.*, 197.
Sawyer, Dr., on vesico-vaginal fistula, D. O. S., 443.
Scarlatina faucium, Dr. Moore on, T. C. P., 218.
Scarlatina, puerperal, Dr. T. Hayden on, D. O. S., 443.
Science and art of surgery by Mr. Erichsen, *Rev.*, 442.
Scotland, report of her majesty's commissioners on lunatic asylums in, *Rev.*, 358.
Scrotum, on the use of the écraseur in operations on the, 130.
Scrotum, elephantiasis of, M. Larrey on, *Rev.*, 194.
Skeletons, table of measurement of, 72.
Skrzeczka, Dr., on a peculiar cavernous degeneration of the heart, *Trans.*, 249.
Sligo district hospital for the insane, report of the, by Dr. M'Munn, *Rev.*, 379.
Smith, Dr. A., on pneumonia, T. C. P., 222.
Smith, Mr., on stricture of the urethra, *Rev.* 163.
Soultzbad mineral waters, Dr. E. Eissen on, *Notice*, v.
South, Mr., on hospital nurses, *Notice*, vi.
Sternum, fracture of the, during delivery, *Trans.*, 477.
Stewart, Dr., report of the Belfast district hospital for the insane by, *Rev.*, 376.
Stricture of the urethra, Mr. Smith on, *Rev.*, 163.
Strumous ophthalmia, Dr. Thorp on, 95; note on chloroform in, 326.
Strychnia, case of suicidal poisoning by, by Dr. M'Clintock, 214.
Suicidal poisoning by strychnia, case of, by Dr. M'Clintock, 214.
Surgery, of the eye and ear, Mr. T. Wharton Jones on the, *Rev.*, 182 ; operative, reports on, by Mr. Butcher, 257; the science and art of, by Mr. Erichsen, *Rev.*, 442.
Sweden, epidemic diseases in, by by Dr. Wistrand, *Rev.*, 407.
Swedish medical literature, reviews of recent, 175, 407.
Syphilis, essays on, by Dr. Porter, 75, 287.
Syphilization, discussion in the Norwegian medical society of Christiania on, *Rev.*, 400.

Testicle, on the use of the écraseur in operation on the, 130.
Tetanus, Dr. Hobart on, 133; C. M. & S. S., 236; traumatic, case of, by Dr. Corry, 461.
Thomson, Dr., on the structure and functions of the eye, *Notice*, vii.
Thorp, Dr., on strumous ophthalmia, 95, 326.
Thurnam, Dr., report of the Wilts county hospital for the insane by, *Rev.*, 382.
Tibia, successful excision of a large part of the, 279.
Tongue, on the use of the écraseur in operations on the, 131.

Tubercles, Dr. Warren on the influence of pregnancy on the development of, *Rev.*, 431.
Tuberculous disease, Mr. Lee on the effects of climate on, *Rev.*, 431.
Tumour, large fibrous, of the neck, case of, by Mr. Browne, R. N., 464.
Tumours in the anal region, écrasement linéaire in, 125; cartilaginous, of the jaw, Dr. Heyfelder on, 282.

Urethra, stricture of the, Mr. Smith on, *Rev.*, 163.
Urinary secretion of fishes, Dr. Davy on the, *Rev.*, 185.
Urling, G. F., on vocal gymnastics, *Notice*, v.
Uterus, case of recovery from ruptured, by Dr. Harvey, C. M. & S.S., 241; anteflexion of the, Dr. J. H. Bennet on, 314; Dr. M'Clintock on laceration of the, D.O.S., 447; Dr. M'Clintock on a new symptom of rupture of the, D. O. S., 450.

Vaccination and syphilization, Professor Faye's investigations on, *Rev.*, 400.
Vagina, Dr. M'Clintock on laceration of the, D. O. S., 447.
Varna, Dr. Mackay on the cholera at, *Rev.*, 395.
Vesico-vaginal fistula, Dr. Sawyer on, D. O. S., 443.
Vienna, Dr. N. P. Hamberg on the modes of investigation employed in the chemico-pathological laboratory at, *Rev.*, 407.
Virchow, Rud., case of manifold neuromas by, *Trans.*, 474.
Vocal gymnastics, G. F. Urling on, *Notice*, v.

Warren, Dr., on the influence of pregnancy on the development of tubercles, *Rev.*, 431.
Wave-theory of light, Dr. Lloyd on the, *Notice*, vi.
Webster, Dr., notes on Belgian lunatic asylums by, *Rev.*, 374.
Williams, Mr., on the ophthalmia of Ireland, *Rev.*, 182.
Williamson, Dr., on the human crania in the army medical museum, 42.
Wilts county hospital for the insane, report of the, *Rev.*, 382.
Wistrand, Dr. A. T., on epidemic diseases in Sweden, *Rev.*, 407.
Worms, lumbricoid, in the liver, Dr. Mattei on, *Trans.*, 490.
Wounds, gunshot, Dr. Saurel on, *Notice*, v.; cases of, by Mr. Browne, R. N., B. M. S., 462.
Wourali poison, Dr. Hobart on the peculiar action of the, 143.
Wutzer's operation for radical hernia, 177.

END OF VOL. XXIV.

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had in the Church the order of priests and dea...
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cons, except that the latter were not authoris...
make certain prayers; but he suggested that this diffe...
between priests and deacons might be further ext...
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persons who were not already qualified to use the wh...
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into it. He advocated a still more subordinate office
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weekly offertories been discussed. He suggested th...
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which he had referred to, the weekly offertories migh...
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ings like the one they were holding were likely to facil...
such matters, and get rid of some of the rusty mach...
and a great deal of the red tape in the governmen...
Church. (Hear, hear.) If a person at the pr...
was anxious to build a church he was treated ...
favour was to be conferred upon him th...
going to confer a favour. (Applause.)

Mr. T. W. DUNN contended that the C...
much from what had been done by ...

find many t... back to the per... the Reformation. In former s Shaw was in the diocese of Lichfield, then in that of ter, and now it was in the diocese of Manchester. He ved there was good reason for the opinion so long since as 1515 an appointment was to the office of reader in the chapel of Shaw in wich. He would not undertake to say that ever since eformation there had been a material fabric or church ing on the site of the present chapel; but so long as g that time there had been the separate building of ty Chapel, Shaw, he thought it highly probable it on that spot. Certain it was that in 1739 there was pel standing there, which was found to be insufficient, accordingly taken down and rebuilt on an enlarged

His mother attended this enlarged church for al years. In 1797 or 1798, this enlarged church was l to be insufficient, taken down, and the present h erected on a much larger scale. This church has d for nearly three-quarters of a century, and his her had attended service in it during almost the whole hat long period. Thus she was a living bond of con- on between the new church, of which she had the foundation-stone, and the two which had ded it. In conclusion, he proposed the health of icar (the Rev. Mr. Bartleet), whose unflagging industry perseverance in the work of the ministry in the parish ly eulogised.—The CHAIRMAN, in responding to the d he found, on looking over the deeds relating to Shaw, that Shaw was described as being served priests; he was rather afraid that some the parish of Shaw was still served by a (Laughter.) He wanted to build, not a tial church, but such a church as ther

ex... ments is appen... he prefers the Americ... both varieties are liab... bug tribe, which sw... development. On th... ments, meagre as th... which you are able so... superiority of Hingh... these provinces.

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9. In conclusion the ... me to convey to you h... which you have co...